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SESSIONAL PAPERS

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OF THE

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OF THE

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LIST OF SESSIONAL PAPERS

PRESENTED TO THE HOUSE DURING THE SESSION.

TITLE.	No.	REMARKS
Accounts, Public	1	*Printed.*
Agricultural College, Report	30	"
Agricultural and Experimental Union, Report	32	"
Agricultural Societies, Report	42	"
Agriculture, Department of, Report	29	"
Almonte High School, correspondence	103	*Not Printed.*
Algonquin Park Forest Reserve	72	*Printed.*
Archivist, Report	51	"
Auditor, Statement of	54	"
Bee-Keepers', Report	37	*Printed.*
Bilingual Schools, correspondence with Bishop Fallon	101	*Not Printed.*
Bilingual Schools, correspondence with Bishop Scollard	102	"
Births, Marriages and Deaths, Report	20	*Printed.*
Canada Temperance Act, attitude of officials in Welland	76	*Not Printed.*
Children, Dependent, Report	27	*Printed.*
Coal supply for Public Institutions	74	*Not Printed.*
Colcock, N.B., moneys advanced to	60	"
Cole's Report, Mining Engineer T. & N.O.	88	*Printed.*
Common Gaols, official regulations	92	"
Consolidated Revenue Fund, Orders-in-Council	63	*Not Printed.*
Corn Growers' Association, Report	35	*Printed.*
Dairymen's Association, Report	38	*Printed.*
Division Courts, Report	5	"
Division Courts, Revised Rules and Orders	71	"
Education, Report	17	*Printed.*
Education, Orders-in-Council	55	"
Education, grants to rural public schools	77	*Not Printed.*
Education, investigation by Dr. Merchant	86	"
Education, grants withheld	98	"
Education, correspondence, Almonte School	103	"
Education, authorized text-books	104	"

Title.	No.	Remarks.
Elections, return from Records	50	*Printed.*
Electric Railways, Report for or against	62	"
Employers' Liability, for Compensation to Employees	53	"
Entomological Society, Report	36	"
Epileptics Hospital, Report	23	"
Estimates	2	"
Factories, Report	46	*Printed.*
Farmers' Institutes, Report	40	"
Feeble-minded, Report	24	"
Forest Reserves—Pembroke Lumber Company	72	"
Friendly Societies, Report	11	*Printed.*
Fruit Growers', Report	44	"
Fruits of Ontario	33	"
Game and Fish, Report	14	*Printed.*
Goodman, prosecution of correspondence	59	*Not Printed.*
Good Roads Commission, Report	84	*Printed.*
Grand River, overflow, correspondence	58	*Not Printed.*
Guelph Prison Farm, buildings erected	75	"
Hamilton Athletic Association, correspondence	79	*Not Printed.*
Health, Report	21	*Printed.*
Health, Special Report	21a	"
Highway Improvement, Report	15	"
Horticultural Societies, Report	43	"
Hospitals and Charities, Report	25	"
Hospitals and Charities, Regulations	91	"
Hydro-Electric Power Commission, Report	48	"
Hydro-Electric Power Commission, moneys spent on line from Morrisburg to Prescott	87	*Not Printed.*
Idiots and Epileptics, Report	23	*Printed.*
Industrial Farms, Official Regulations	93	"
Industries, Report of Bureau	45	"
Insane Hospitals, Report	22	"
Insane Hospitals, Regulations	95	"
Insane Hospitals, Bulletin	56	"
Insurance, Report	10	"
Kenora, action against, correspondence	70	*Not Printed.*
Labour, Report	16	*Printed.*
Lands, Forests and Mines, Report	3	"
Legal Offices, Report	6	"
Library, Report	52	*Not Printed.*

Title.	No.	Remarks.
Liquor License Acts, Report	28	*Printed.*
Liquor License Holders in Toronto	69	*Not Printed.*
Live Stock Associations, Report	39	*Printed.*
Loan Corporations, Statements	12	"
Local Option, convictions	89	*Not Printed.*
Mercer Reformatory, Regulations	90	*Printed.*
Meredith, Sir William R., moneys paid to	80	*Not Printed.*
Murray, Mather & Co., option to	82	"
Mines, Report of Bureau	4	*Printed.*
Municipal Drainage, Order-in-Council	85	"
McKelvie, Overseer, conduct of	59	*Not Printed.*
Northern Ontario, road construction in	73	*Printed.*
Ontario Homes Company, charter of	99	*Not Printed.*
Ontario Hospitals, Regulations	95	*Printed.*
Ontario Railway and Municipal Board, Report	49	"
Ontario Reformatory, Regulations	94	"
Ontario Vegetable Growers', Report	34	"
Pembroke Lumber Company	72	*Printed.*
Power Commission Act, Orders-in-Council	97	*Not Printed.*
Prison Farm, buildings on	75	"
Prisons and Reformatories, Report	26	*Printed.*
Provincial Auditor, Statements	54	"
Provincial Conference, Proceedings	67	
Provincial Municipal Auditor, Report	8	"
Provincial securities sold	64	*Not Printed.*
Public Accounts, 1913	1	*Printed.*
Public Health, Report	21	"
Public Institutions, coal for	74	*Not Printed.*
Public Works, Report	13	*Printed.*
Queen Victoria N. F. Park, Report	9	*Printed.*
Railway and Municipal Board, Report	49	*Printed.*
Registrar-General, Report	20	"
Registry Offices, Report	7	"
Road Construction in Northern Ontario	73	"
Rondeau Provincial Park, Regulations	57	"
Secretary and Registrar, Report	19	*Printed.*
Smuck, William, license application	66	*Not Printed.*
Statute distribution	96	"
Surrogate Court, Orders-in-Council	61	"

Title.	No.	Remarks.
Taylor, Scott & Co., amount received from	68	*Not Printed.*
Taylor, Mr., evidence of	83	"
Text-books, authorized	104	"
Timber Limits, sold	65	"
Timiskaming & N. O. Ry. Commission, Report	47	*Printed.*
Timiskaming & N. O. Ry., Cole's Report	88	"
Timiskaming & N. O. Ry., settlers' effects, over	100	*Not Printed.*
Toronto Liquor License Holders	69	"
Toronto University, Report	18	*Printed.*
Toronto University, cost of heating plant	78	*Not Printed.*
Toronto University, *re* deficit	81	"
Vegetable Growers', Report	34	*Printed.*
Veterinary College, Report	31	"
Whitson's Report on road construction in New Ontario.	73	*Printed.*
Women's Institutes, Report	41	"
Workmen's Compensation, Report	53	"

LIST OF SESSIONAL PAPERS

Arranged in Numerical Order with their Titles at full length; the dates when presented to the Legislature; the name of the Member who moved the same, and whether ordered to be Printed or not.

CONTENTS OF PART I.

No. 1 Public Accounts of the Province for the year ending 31st October, 1913. Presented to the Legislature, 3rd March, 1914. *Printed.*

No. 2 Estimates—Supplementary, for the service of the Province for the year ending 31st October, 1913-14. Presented to the Legislature, 27th February and 9th April, 1914. *Printed.* Estimates for the year ending 31st October, 1915. Presented to the Legislature, April 21st, 1914. *Printed.*

CONTENTS OF PART II.

No. 3 Report of the Department of Lands, Forests and Mines for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

No. 4 Report of the Bureau of Mines for the year 1913. Presented to the Legislature, April 1st, 1914. *Printed.*

No. 5 Report of the Inspector of Division Courts for the year 1913. Presented to the Legislature, March 11th, 1914. *Printed.*

No. 6 Report of the Inspector of Legal Offices for the year 1913. Presented to the Legislature, April 1st, 1914. *Printed.*

No. 7 Report of the Inspector of Registry Offices for the year 1913. Presented to the Legislature, April 17th, 1914. *Printed.*

No. 8 Report of the Provincial Municipal Auditor for the year 1913. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 9 Report of the Commissioners for the Queen Victoria Niagara Falls Park for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

CONTENTS OF PART III.

No. 10 Report of the Department of Insurance for the year 1913. Presented to the Legislature, March 20th, 1914. *Printed.*

No. 11 Report of the Registrar of Friendly Societies for the year 1914. Presented to the Legislature, March 20th, 1914. *Printed.*

CONTENTS OF PART IV.

No. 12 Loan Corporations Statements made by Building Societies, Loan Companies, Loaning Land and Trust Companies for the year 1913. Presented to the Legislature, March 20th, 1914. *Printed.*

No. 13 Report of the Department of Public Works for the year 1913. Presented to the Legislature, March 11th, 1913. *Printed.*

No. 14 Report of the Game and Fisheries Department for the year 1913. Presented to the Legislature, February 27th, 1914. *Printed.*

CONTENTS OF PART V.

No. 15 Report on Highway Improvement in the Province for the year 1913. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 16 Report of the Bureau of Labour for the year 1913. Presented to the Legislature, March 11th, 1914. *Printed.*

CONTENTS OF PART VI.

No. 17 Report of the Department of Education for the year 1913. Presented to the Legislature, March 12th, 1914. *Printed.*

CONTENTS OF PART VII.

No. 18 Report of the University of Toronto Board of Governors for the year ending 30th June, 1913. Presented to the Legislature, March 18th, 1914. *Printed.*

No. 19 Report of the Secretary and Registrar of the Province for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

No. 20 Report of the Registrar-General upon Births, Marriages and Deaths for the year 1913. Presented to the Legislature, March 27th, 1913. *Printed.*

No. 21 Report of the Provincial Board of Health for the year 1913. Presented to the Legislature, March 16th, 1914. *Printed.*

No. 21*a* Special Report of the Provincial Board of Health on the work of the District Officers of Health for the year 1912-13. Presented to the Legislature, March 6th, 1914. *Printed.*

CONTENTS OF PART VIII.

No. 22 Report upon the Hospitals for the Insane for the year 1913. Presented to the Legislature, April 21st, 1914. *Printed.*

No. 23 Report upon the Hospitals for Idiots and Epileptics at Orillia and Woodstock for the year 1913. Presented to the Legislature, April 28th, 1914. *Printed.*

No. 24 Report upon the Feeble-minded of the Province for the year 1913. Presented to the Legislature, April 23rd, 1914. *Printed.*

No. 25 Report upon the Hospitals and Charities for the year 1913. Presented to the Legislature, April 14th, 1914. *Printed.*

No. 26 Report upon the Prisons and Reformatories of the Province for the year 1913. Presented to the Legislature, April 21st, 1914. *Printed.*

No. 27 Report on Neglected and Dependent Children for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

No. 28 Report upon the operation of the Liquor License Acts, Ontario, for the year 1913. Presented to the Legislature, February 27th, 1914. *Printed.*

CONTENTS OF PART IX.

No. 29 Report of the Department of Agriculture for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 30 Report of the Agricultural College for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 31 Report of the Veterinary College for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 32 Report of the Agricultural and Experimental Union for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 33 The Fruits of Ontario. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 34 Report of the Vegetable Growers' Association for the year 1913. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 35 Report of the Corn Growers' Association for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 36 Report of the Entomological Society for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

CONTENTS OF PART X.

No. 37 Report of the Bee-Keepers' Association for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 38 Report of the Dairymen's Association for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 39 Report of the Live Stock Associations for the year 1913. Presented to the Legislature, March 3rd, 1914. *Printed.*

No. 40 Report of the Farmer's Institutes for the year 1913. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 41 Report of the Women's Institutes for the year 1913. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 42 Report of the Agricultural Societies of the Province for the year 1913. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 43 Report of the Horticultural Societies of the Province for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 44 Report of the Fruit Growers' Association for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 45 Report of the Bureau of Industries for the year 1913. Presented to the Legislature, April 23rd, 1914. *Printed.*

No. 46 Report of the Inspectors of Factories for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

CONTENTS OF PART XI.

No. 47 Report of the Timiskaming and Northern Ontario Railway Commission for the year 1913. Presented to the Legislature, March 23rd, 1914. *Printed.*

No. 48 Report of the Hydro-Electric Power Commission for the year 1913. Presented to the Legislature, March 16th, 1914. *Printed.*

CONTENTS OF PART XII.

No. 49 Report of the Ontario Railway and Municipal Board for the year 1913. Presented to the Legislature, April 24th, 1914. *Printed.*

No. 50 Return from the Records of the Bye-elections held on the second day of June, the fourteenth day of July, the eighth day of September, and the twenty-seventh day of November, 1913. Presented to the Legislature, February 18th, 1914. *Printed.*

No. 51 Report of the Provincial Archivist for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

CONTENTS OF PART XIII.

No. 52 Report upon the state of the Library. Presented to the Legislature, April 23rd, 1914. *Not Printed.*

No. 53 Final Report of Commissioner on Laws relating to the Liability of Employers to make Compensation to their Employees. Presented to the Legislature, March 27th, 1914. *Printed.*

No. 54 Statements of Provincial Auditor for the year 1912-13. Presented to the Legislature, March 19th, 1914. *Printed.*

No. 55 Copies of Orders-in-Council and Regulations under section 27 of the Department of Education Act. Presented to the Legislature, February 25th, 1914. *Printed.*

No. 56 Bulletin of the Ontario Hospitals for the Insane. Presented to the Legislature, February 27th, 1914. *Printed.*

No. 57 Regulations respecting Rondeau Provincial Park, 1913. Presented to the Legislature, February 27th, 1914. *Printed.*

No. 58 Return to an Order of the House of the 27th March, 1913, for a Return showing:—1. Copies of all correspondence between the Minister of Public Works or any other member of the Government or any official thereof, and any person or persons relating to the floods on the Grand River or any other river in the Province during the years 1908, 1909, 1910, 1911, 1912. 2. Copies of all petitions received during the said years by the Government or any Minister of the Government from any person or persons relating to the floods on the Grand River or any other river in the Province, or requesting the Government to take action towards the prevention of floods. 3. Copies of all reports made by any engineer or engineers employed on behalf of the Government or on behalf of the Hydro-Electric Power Commission, for the purpose of investigating the floods on the Grand River or any other river in the Province, or the means of preventing or mitigating such floods or of conserving and regulating the flow of such rivers or investigating the electrical power potentialities of such rivers. Presented to the Legislature, February 27th, 1914. Mr. *Marshall.* *Not Printed.*

No. 59 Return to an Order of the House of the 22nd April, 1913, for a Return showing:—Copies of all correspondence between the Attorney-General or any other member of the Government or any official of the Government and any other person or persons relating to:—1. The prosecution of one Goodman, formerly Chief of Police at New Liskeard on November 12th last, for an offence against the Game Laws. 2. The conduct of one McKelvie, an overseer of the Game and Fisheries Department at

New Liskeard, Ont., or the dismissal of the said McKelvie from his position. 3. The prosecution of one Eli Tibbs in November, 1912, for illegal possession of furs. 4. The prosecution of any party or parties for illegal possession of furs seized by the said McKelvie from one Angus Wabi. Presented to the Legislature, February 27th, 1914. Mr. *Elliott.* *Not Printed.*

No. 60 A Return to an Order of the House of the 15th April, 1913, for a Return showing:—1. In detail the persons to whom the sum of $19,946.18, appearing an page 323 of the Public Accounts, 1912, was advanced by N. B. Colcock, and the purposes for which the same was advanced. 2. In detail the persons to whom the sum of $11,060.85, appearing on page 372 of the Public Accounts was paid by N. B. Colcock, and the purposes for which the same was paid. Presented to the Legislature, March 3rd, 1914. Mr. *Anderson (Bruce).* *Not Printed.*

No. 61 Copies of Orders-in-Council authorizing payments out of Surrogate of the Counties of York and Simcoe in accordance with the provisions of the Surrogate Courts Act. Presented to the Legislature, March 10th, 1914. *Not Printed.*

No. 62 Return to an Order of the House of the 11th March, 1913, for a Return showing for what Municipalities was the Report of the Lieutenant-Governor in Council in favour of, or against, building an electric railway for such Municipalities. Presented to the Legislature, March 16th, 1914. Mr. *Elliott.* *Printed.*

No. 63 Copies of Orders in Council in accordance with the provisions of sec. 2, cap. 2, 2 George V, An Act for raising money on the Credit of the Consolidated Revenue Fund of Ontario. Presented to the Legislature, March 16th, 1914. *Not Printed.*

No. 64 Return to an Order of the House of the 2nd March, 1914, for a Return showing:—1. What securities have been sold by the Province since October 31st, 1912. 2. What was the date of the sales. 3. What are the names of the purchasers. 4. What are the prices at which such securities were sold. Presented to the Legislature, March 16th, 1914. Mr. *Sinclair.* *Not Printed.*

No. 65 Return to an Order of the House of the 27th February, 1914, for a Return showing:—1. What timber limits, or areas, have been sold by the Government since the first day of January, 1913, and the total area of each. 2. The price at which each such limit, or area, was sold. 3. The names of the respective purchasers and if any were sold at public auction. 4. And if any were so sold at auction, which limit or area was so sold, and the dates on which the several sales took place. Presented to the Legislature, March 18th, 1914. Mr. *Mageau.* *Not Printed.*

No. 66 Return to an Order of the House of the 6th March, 1914, for a Return showing:—1. Application for license of William Smuck of the Township of Bayham in the electoral district of East Elgin for the year 1913-14; the granting thereof; the withdrawal of such application; all correspondence between the Department and any officer thereof and the said Smuck, or the License Inspector or other residents of East Elgin in reference thereto. 2. The application of the said Smuck to be appointed License Inspector for East Elgin, and all protests against his appointment. 3. All letters, reports or communications in reference to the health or work by the former License Inspector, Mr. W. R. Andrews. 4. The resignation of the former License Inspector or Notice of the Termination of his employment. 5. All protests or complaints during the years 1912, 1913 and 1914 from residents of Aylmer or other citizens of East Elgin in reference to the lack of enforcement of the License Law and the conduct of the hotels in Aylmer or of license officials of East Elgin. Presented to the Legislature, March 27th, 1914. Mr. *Rowell. Not Printed.*

No. 67 Minutes of the Proceedings in Conference of the Representatives of the Provinces, October, 1913. Presented to the Legislature, March 19th, 1914. *Printed.*

No. 68 Return to an Order of the House of the 2nd March, 1914, for a Return showing:—1. What amount was received by the Government from Messrs. Taylor, Scott & Co. for the work done by prisoners from Central Prison under its contract with Taylor, Scott & Co., dated 1st September, 1905, for each year during which the contract was in force. 2. How long was the contract in force. 3. What amounts were paid by the Government for debt, damages or costs respectively in connection with or arising out of the said contract. 4. To whom were such amounts paid. 5. Was the agreement between Taylor, Scott & Co. and the Government changed after the agreement had been submitted to the House and approved by it. 6. If it were changed, were such changes embodied in an agreement in writing between the parties. 7. If it was changed, was such change or modified agreement submitted to the House for approval. Presented to the Legislature, March 23rd, 1914. Mr. *Bowman. Not Printed.*

No. 69 Return to an Order of the House of the 18th March, 1914, for a Return showing:—1. The names of the license holders under the Liquor License Act in the City of Toronto for the year from 1st May, 1908, to 1st May, 1909, and the place or places of business in which each license holder carried on business. 2. The names of those license holders under the said Act, and the location of the premises in which they carried on business, whose licenses were cut off or were not renewed in the year

1909 in Toronto. 3. The names of the license holders in Toronto whose licenses were transferred with the approval of the Board of License Commissioners in the years 1909, 1910, 1911, 1912 and 1913; the places in which they carried on business; the names of the persons to whom licenses were transferred; and the locations of the premises in which the persons to whom the licenses were transferred carried on business. Presented to the Legislature, March 23rd, 1914. Mr. *Proudfoot. Not Printed.*

No. 70 Return to an Order of the House of the 26th March, 1913, for a Return showing:—1. All the correspondence (including telegrams) passing between the Prime Minister, the Attorney-General, the Minister of Crown Lands or any other member or official of the Government and the Counsel or Solicitors for Keewatin Power Company, or the Counsel or Solicitors for the Hudson's Bay Company with reference to the action brought by these Companies against the Town of Kenora for a declaration that they and not the Crown were the owners of the water power on the East Branch of the Winnipeg River, and that the lease from the Crown to the Town of Kenora was invalid. 2. A copy of the telegram (if any) sent by the Prime Minister to the Counsel for the Keewatin Power Company advising him that the Government did not desire to defend its own title to the water power or be added as a party to the action. 3. All correspondence (including telegrams passing between the Town of Kenora or the Counsel or Solicitors for the Town of Kenora, and the Government or any Minister or official thereof with reference to these actions, and particularly all communications requesting the Crown to take part in the defence of its own title to the water power. 4. Copies of all correspondence (including telegrams) passing between the Prime Minister, Attorney-General, the Minister of Crown Lands or any other Minister or official of the Government, and Mr. W. H. Hearst, acting as Counsel for the Government, in reference to these actions. 5. Copy of the judgments of the Trial Judge and the Court of Appeal. Presented to the Legislature, March 24th, 1914. Mr. *Rowell. Not Printed.*

No. 71 Revised Rules, Orders and Forms of the Division Courts of the Province of Ontario. Presented to the Legislature March 26th, 1914. *Printed.*

No. 72 Correspondence and Papers relating to timber in the Algonquin Park Forest Reserve. Presented to the Legislature, March 27th, 1914. *Printed.*

No. 73 Whitson's Report upon Road Construction in Northern Ontario. Presented to the Legislature, March 30th, 1914. *Printed.*

No. 74 Return to an Order of the House of the 27th February, 1914, for a Return showing:—1. The names of the tenderers for the supply of coal for Government Institutions, in Toronto, during the years 1910, 1911, 1912 and 1913, respectively. 2. The amount of each tender for each of such years. 3. The names of the contractor or contractors for each of such years. 4. The amount of coal supplied under each contract during each year. 5. The prices at which the coal was purchased. Presented to the Legislature, March 31st, 1914. Mr. *Bowman*. *Not Printed.*

No. 75 Return to an Order of the House of the 27th February for a Return showing:—1. What buildings have been erected by the Province at the Prison Farm at Guelph. 2. What has been the total cost to the Province of each building. 3. Were any of these buildings built by prison labour in whole or in part. 4. If so, what buildings, and what class of prison labour was employed. 5. And if the statement of cost makes any allowance for the prison labour employed, if any. Presented to the Legislature, March 31st, 1914. Mr. *Atkinson*. *Not Printed.*

No. 76 Return to an Order of the House of the 18th March, 1914, for a Return showing:—1. Whether the Minister of Agriculture or any officer or official of his Department, or the Minister of Education or any officer or official of his Department, communicated with the district representative of Agriculture within the County of Welland with reference to his attitude to the Canada Temperance Act or the vote to be taken thereon on the 29th January last. 2. And if any communication was made, was such communication verbal or in writing. 3. And who was the officer making the same, and what was the date thereof. Presented to the Legislature, March 31st, 1914. *Not Printed.*

No. 77 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. The conditions upon which grants are made to rural public schools. 2. Were the grants to the rural public schools of Ontario in 1913 less per school in 1913 than they were in the year 1912. If so, how much. 3. Has the Department of Education notified the Boards of Public School Trustees of Rural Schools, or any of them, that they cannot pay the grant provided for by the regulations. 4. If such notice has been given, upon what their ground for refusing to pay the grants. 5. Has the Department of Education notified the School Boards of Rural Schools, or any of them, that the grants this year would be cut down 28 *per cent.*, or any amount whatever. If so, how much. Presented to the Legislature, April 1st, 1914. Mr. *Kohler*. *Not Printed.*

No. 78 Return to an Order of the House of the 30th March, 1914, for a Return showing:—1. What was the estimated cost of the heating plant for the Toronto University. 2. What was the actual cost of the plant when fully completed. 3. Has the total amount

been paid; if not, what amount, if any, is held in reserve. 4. And if the heating plant is giving satisfaction. Presented to the Legislature, April 1st, 1914. Mr. *Bowman*. *Not Printed.*

No. 79 Return to an Order of the House of the 1st April, 1914, for a Return of copies of all correspondence, resolutions or other documents received by, or on behalf of any Member of the Government in any way relating to the Hamilton Athletic Association regarding which certain legislation is sought for during the current Session. Presented to the Legislature, April 2nd, 1914. Mr. *Studholme*. *Not Printed.*

No. 80 Return to an Order of the House of the 1st April, 1914, for a Return showing:—1. What sum of money has Sir William Meredith, the Chief Justice of Ontario, received from the Government in addition to his salary as Chief Justice, since January 1st, 1909, to date. 2. In what capacity did Chief Justice Sir William Meredith receive such sum or sums, and what amount was received with respect to each capacity in which he received any sum or sums as aforesaid. Presented to the Legislature, April 2nd, 1914. Mr. *Anderson* (*Bruce*). *Not Printed.*

No. 81 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. If there was a deficit in the financial operations of the Provincial University for the fiscal year ending 1912. If so, how much. 2. Was there a deficit in the financial operations of the Provincial University for the fiscal year 1913. If so, how much. 3. If there have been deficits during the years 1912-13, or either of them, how have these deficits been provided for. 4. What is the estimated expenditure of the Provincial University for the current fiscal year. 5. What is the estimated revenue of the University for the current fiscal year. Presented to the Legislature, April 2nd, 1914. Mr. *Marshall*. *Not Printed.*

No. 82 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. If there was an option given to the firm of Murray, Mather & Co. to purchase certain Government securities during the calendar year 1913. 2. If so, what was the date of the option, and what were the character, amount and price of the securities covered by it. 3. Was such option, if any, exercised; and if so, to what extent. Presented to the Legislature, April 3rd, 1914. Mr. *Sinclair*. *Not Printed.*

No. 83 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. Copy of evidence of Mr. Taylor, of Messrs. Taylor, Scott & Co., given before the Dominion Penitentiary Investigation Commission, of which Mr. G. M. Macdonald, K.C., of Kingston, is Chairman, and which was taken in Shorthand by a Stenographer provided by Dr. Gilmour,

Warden of the Central Prison, such evidence or a copy thereof being now in the custody or control of the Provincial Secretary, or of some of the officers or officials of his Department, or of the institutions under the control of his Department. 2. Copies of all correspondence passing between the Provincial Secretary, or any officer or official of his Department, or any officer or official of any of the institutions under the charge of his Department, and Mr. Joseph Downey, in reference to the said evidence or the production thereof. Presented to the Legislature, April 3rd, 1914. Mr. *Bowman*. *Not Printed.*

No. 84 Report of the Good Roads Commission. Presented to the Legislature, April 7th, 1914. *Printed.*

No. 85 Copy of an Order-in-Council approved by His Honour the Lieutenant-Governor, under the provisions of 552 of sec. 18 of the Municipal Drainage Act. Presented to the Legislature, April 8th, 1914. *Printed.*

No. 86 Return to an Order of the House of the 2nd March, 1913, for a Return showing:—1. Copies of all correspondence between the Minister of Education or any other member or official of the Government and any other person or persons during 1910, 1911 and 1912, relating to the investigation made by Dr. Merchant of the bi-lingual or French-English Schools in Ontario. 2. Copies of all correspondence between the Minister of Education or any other member or official of the Government and any other person or persons during the year 1912, relating to Regulation No. 17. Presented to the Legislature, April 9th, 1914. Mr. *Mageau*. *Not Printed.*

No. 87 Return to an Order of the House of the 7th April, 1914, for a Return showing:—1. How much the Hydro-Electric Power Commission has spent in building the trunk line from Morrisburg to Prescott, and from Morrisburg to Winchester and Chesterville. 2. Did the Hydro-Electric Power Commission enter into an agreement with the New York and Ontario Power Company, or any person on their behalf, for a supply of power for transmission on this line, to be developed at Waddington or elsewhere; and if so, what is the date of such agreement. 3. Was it a term of any such agreement that the Directors of the New York and Ontario Power Company became personally liable if power was not supplied within a certain defined time. 4. Has the Hydro-Electric Power Commission entered into any agreement with the Rapids Power Company for the supply of power; if so, what is the date of such agreement. Presented to the Legislature, April 9th, 1914. *Not Printed.*

No. 88 Coles' Report, Mining Engineer, Timiskaming and Northern Ontario Railway Company. Presented to the Legislature, April 28th, 1914. *Printed.*

Statement showing Comparison Wages paid Trainmen

Occupation	Class of Service.	1905 Rate per 100 miles.	1906 Rate per 100 miles.	1906 Per cent. Increase	1907 Rate per 100 miles.	1907 Per cent. Increase
		$ c.	$ c.		$ c.	
Conductors ..	Passenger	3 00	3 00	.....	2 44	.....
do ...	Way Freight	3 00	3 00	.....	3 50	16.7
do ...	Through Freight	3 00	3 00	.....	3 10	3.3
do ...	Pickup	3 00	3 00	.....	3 10	3.3
do ...	Work and Snowplow	3 00	3 00	.....	3 10	3.3
do ...	North Bay Yard, Day	3 00	3 00	.....	3 10	3.3
do ...	do Night	3 00	3 00	.....	3 10	3.3
do ...	Other Yards, Day	3 00	3 00	.....	3 10	3.3
do ...	do Night	3 00	3 00	.....	3 10	3.3
Baggagemen...	Passenger Train	2 00	2 00	.....	1.4152	.....
Brakemen	do do	2 00	2 00	.....	1.2932	.....
do	Way Freight	2 00	2 00	.....	2 & 2 45	11.2
do	Through Freight	2 00	2 00	.....	1 65–2 07	.....
do	Pickup	2 00	2 00	.....	1 65–2 07	.....
do	Work and Snowplow	2 00	2 00	.....	1 65–2 07	.....
do	North Bay Yard, Day	2 00	2 00	.....	1 65–2 07	.....
do	do Night	2 00	2 00	.....	1 65–2 07	.....
do	Other Yards, Day	2 00	2 00	.....	1 65–2 07	.....
do	do Night	2 00	2 00	.....	1 65–2 07	.....
Engineers	Passenger (109-110)	2 75	2 75–3 40	23.6	3 40	.....
do	do (less than 125%)	2 75	2 75–3 40	23.6	3 40	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Way Freight (109-110)	3 30	3 30–3 55	7.6	3 55	.....
do	do (less than 125%)	3 30	3 30–3 55	7.6	3 55	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Th. Freight (109-110)	3 30	3 30–3 55	7.6	3 55	.....
do	do (less than 125%)	3 30	3 30–3 55	7.6	3 55	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Work Train (109-110)	3 30	3 30–3 55	7.6	3 55	.....
do	do (less than 125%)	3 30	3 30–3 55	7.6	3 55	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Yard	3 30	3 30–3 55	7.6	3 55	.....
do	Repairs and Watching	1 50	1 50	.....	1 50	.....
Firemen	Passenger (109-110)	2 00	2 00–2 10	5.	2 10	.....
do	do (less than 125%)	2 00	2 00–2 10	5.	2 10	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Way Freight (109-110)	2 00	2 00–2 20	10.	2 20	.....
do	do (less than 125%)	2 00	2 00–2 20	10.	2 20	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Th. Freight (109-110)	2 00	2 00–2 20	10.	2 20	.....
do	do (less than 125%)	2 00	2 00–2 20	10.	2 20	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Work Train (109-110)	2 00	2 00–2 20	10.	2 20	.....
do	do (less than 125%)	2 00	2 00–2 20	10.	2 20	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Yard	2 00	2 00–2 20	10.	2 20	.....
do	Repairs and Watching	1 50	1 50–	.....	1 50	.....
Average per cent. Increase,	Conductors	.....	.....	.....	.....	2.4
do do	Brakemen	.....	.....	.....	.....	.....
do do	Engineers	.....	.....	10.1	.....	.....
do do	Firemen	.....	.....	8.2	.....	.....
do do	Trainmen and Enginemen	.....	.....	4.8	.....	.....

Decrease in rate for Conductors and Brakesmen in Passenger Service due to increased speed of approximately 45% in amounts

and Enginemen, 1905 to 1913. inclusive.

1908		1909		1910		1911		1912		1913		
Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	6 years Aggregate Increase.
$ c.		$ c.		$ c.		$ c.		$ c.		$ c.		
2 44	.....	2 44	.....	2 44	.....	2 68	9.8	2 68	.....	2 68	....	.....
3 50	.....	3 50	.....	3 50	.....	3 97½	13.6	3 97½	.....	3 97½	....	32.5
3 10	.....	3 10	.....	3 10	.....	3 63	17.1	3 63	.....	3 63	....	21
3 10	.....	3 10	.....	3 10	.....	3 80	22.6	3 80	.....	3 80	....	26.7
3 10	.....	3 10	.....	3 10	.....	3 63	17.1	3 63	.....	3 63	....	21
3 10	.....	3 10	.....	3 10	.....	3 70	19.4	3 70	.....	3 70	....	23.3
3 10	.....	3 10	.....	3 10	.....	3 90	25.8	3 90	.....	3 90	....	30
3 10	.....	3 10	.....	3 10	.....	3 60	16.1	3 60	.....	3 60	....	20
3 10	.....	3 10	.....	3 10	.....	3 80	22.6	3 80	.....	3 80	....	26.7
1.4152	.....	1.4152	.....	1.4152	.....	1 55	9.5	1 55	.....	1 55	....	.....
1.2932	.....	1.2932	.....	1.2932	.....	1 50	16	1 50	.....	1 50	....	.....
2 & 2 45	.....	2 & 2 45	.....	2 45	10.1	2 70	10.2	2 70	.....	2 70	....	35
1 65–2 07	.....	1 65–2 07	.....	2 07	11.3	2 42	16.9	2 42	.....	2 42	....	21
1 65–2 07	.....	1 65–2 07	.....	2 07	11.3	2 56	23.7	2 56	.....	2 56	....	28
1 65–2 07	.....	1 65–2 07	.....	2 07	11.3	2 42	16.9	2 42	.....	2 42	....	21
1 65–2 07	.....	1 65–2 07	.....	2 60	39.8	3 40	30.8	3 40	.....	3 40	....	70
1 65–2 07	.....	1 65–2 07	.....	2 60	39.8	3 60	38.5	3 60	.....	3 60	....	80
1 65–2 07	.....	1 65–2 07	.....	2 60	39.8	3 30	26.9	3 30	.....	3 30	....	65
1 65–2 07	.....	1 65–2 07	.....	2 66	39.8	3 50	34.6	3 50	.....	3 50	....	75
3 55	4.4	3 55	.....	3 55	.....	3 74	5.3	3 74	.....	4 11	9.9	49.5
3 55	4.4	3 55	.....	3 55	.....	3 80	7	3 80	.....	4 18	10	52
.....	.....	.....	.....	.....	.....	3 90	.....	3 90	.....	4 29	10	10
.....	.....	.....	.....	.....	.....	.....	.....	4 07	.....	4 48	10	10
4 15	16.9	4 15	.....	4 15	.....	4 40	6	4 40	.....	4 84	10	46.7
4 15	16.9	4 15	.....	4 15	.....	4 50	8.4	4 50	.....	4 95	10	50
.....	.....	.....	.....	.....	.....	4 65	.....	4 65	.....	5 11	9.9	9.9
.....	.....	.....	.....	.....	.....	.....	.....	4 90	.....	5 39	10	10
3 95	11.3	3 95	.....	3 95	.....	4 12	4.3	4 12	.....	4 53	10	37.3
3 95	11.3	3 95	.....	3 95	.....	4 23	7.1	4 23	.....	4 65	10	40.9
.....	.....	.....	.....	.....	.....	4 35	.....	4 35	.....	4 79	10	10
.....	.....	.....	.....	.....	.....	.....	.....	4 51	.....	4 96	10	10
3 65	2.8	3 65	.....	3 65	.....	3 80	4.1	3 80	.....	4 18	10	26.7
3 65	2.8	3 65	.....	3 65	.....	3 90	6.8	3 90	.....	4 29	10	30
.....	.....	.....	.....	.....	.....	4 00	.....	4 00	.....	4 40	10	10
.....	.....	.....	.....	.....	.....	.....	.....	4 29	.....	4 73	10.3	10.3
3 50	.....	3 50	.....	3 50	.....	3 90	11.4	3 90	.....	4 29	10	30
3 50	133.3	3 50	.....	3 50	.....	3 85	10	3 85	.....	4 25	10.4	183.3
2 20	4.8	2 20	.....	2 20	.....	2 25	2.3	2 25	.....	2 25	....	12.5
2 20	4.8	2 20	.....	2 20	.....	2 42	10	2 42	.....	2 42	....	21
.....	.....	.....	.....	.....	.....	2 53	.....	2 53	.....	2 53	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2 70	.....	2 70	....	.....
2 60	18.2	2 60	.....	2 60	.....	2 60	.....	2 60	.....	2 60	....	30
2 60	18.2	2 60	.....	2 60	.....	2 80	7.7	2 80	.....	2 80	....	40
.....	.....	.....	.....	.....	.....	3 00	.....	3 00	.....	3 00	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	3 15	.....	3 15	....	.....
2 30	4.5	2 30	.....	2 30	.....	2 53	10	2 53	.....	2 53	....	26.5
2 30	4.5	2 30	.....	2.30	.....	2 64	14.8	2 64	.....	2 64	....	32
.....	.....	.....	.....	.....	.....	2 75	.....	2 75	.....	2 75	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2 97	.....	2 97	....	.....
2 30	4.5	2 30	.....	2 30	.....	2 37	3	2 37	.....	2 37	....	18.5
2 30	4.5	2 30	.....	2 30	.....	2 48	7.8	2 48	.....	2 48	....	24
.....	.....	.....	.....	.....	.....	2 58	.....	2 58	.....	2 58	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2 80	.....	2 80	....	.....
2 20	.....	2 20	.....	2 20	.....	2 45	11.4	2 45	.....	2 45	....	22.5
2 50	66.7	2 50	.....	2 50	.....	2 50	.....	2 50	.....	2 50	....	66.7
.....	.....	.....	.....	.....	.....	.....	18.4	.....	.....	.....	....	21.2
.....	.....	.....	.....	.....	21.2	.....	23.8	.....	.....	.....	....	34.7
.....	13.4	.....	.....	.....	.....	.....	7	.....	.....	.....	10	27.3
.....	11.4	.....	.....	.....	.....	.....	6.6	.....	.....	.....	....	13.2
.....	6.9	.....	.....	.....	3.6	.....	13.1	.....	.....	.....	4.1	23.3

trains, longer divisions and consequent greater mileage made by crews, making an increase of earned at present over year 1905.

schools of Ontario issued since the date of the last return laid before this House, March 20th, 1911, and the methods adopted to keep these books up to the requirements of the schools. 3. The cost to the Province of each of these books in the form of payments to authors, printers and electrotypers. 4. The estimated saving to purchasers of all text-books in elementary and secondary schools on all the books as compared with previous prices of the same. 5. The amount annually paid in royalties by the Department of Education to writers of authorized text-books. 6. The cost to the Province of the preparation, editing, and printing of supplementary readers authorized for use in the schools. 7. The amount paid annually by publishers to any official of the Department of Education on text-books authorized for use in the schools of this Province. 8. What Ontario books have been adopted in other Provinces. Presented to the Legislature, April 28th, 1914. Mr. *Musgrove*. *Printed.*

TWELFTH ANNUAL REPORT

OF THE

Temiskaming and Northern Ontario Railway Commission

ONTARIO GOVERNMENT RAILWAY
SIR JAMES PLINY WHITNEY, PREMIER

For Year Ended October 31st

1913

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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1914.

Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West,
TORONTO.

To His Honour Sir John Morison Gibson, K.C.M.G.,

Lieutenant-Governor of Ontario.

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the Twelfth Annual Report of the Temiskaming and Northern Ontario Railway Commission for the fiscal year ended October 31st, 1913.

Respectfully submitted,

J. O. REAUME,

Minister of Public Works.

Toronto, December 31st, 1913.

Hon. J. O. Reaume,

Minister of Public Works,

Toronto, Ontario.

Sir,—I have the honour, by direction, to submit to you for presentation to the Legislature the Twelfth Annual Report of the Temiskaming and Northern Ontario Railway Commission for the fiscal year ended October 31st, 1913.

I have the honour to be,

Sir,

Your obedient servant,

A. J. McGee,

Secretary-Treasurer.

The Temiskaming and Northern Ontario Railway Commission.

J. L. Englehart	*Chairman*	Petrolia.
Denis Murphy	*Commissioner*	Ottawa.
Frederick Dane	*Commissioner and Land Commissioner*	Toronto.

CHIEF OFFICERS.

A. J. McGee	*Secretary-Treasurer*	Toronto.
S. B. Clement	*Chief Engineer and Supt. of Maintenance*	North Bay.
W. A. Griffin	*Superintendent of Traffic*	North Bay.
H. F. Macdonald	*Accountant*	Toronto.
A. J. Parr	*General Freight and Passenger Agent*	North Bay.
T. Ross	*Master Mechanic*	North Bay.
Wm. Young	*General Roadmaster*	North Bay.
Geo W. Lee	*General Agent*	North Bay.
W. A. Graham	*Purchasing Agent and Storekeeper*	North Bay.
A. R. H. Mitchell	*Traffic Accountant*	North Bay.
C. L. Ferguson	*Paymaster*	North Bay.
S. H. Ryan	*Train Master*	North Bay.
W. J. Oldham	*Bridge and Building Master*	North Bay.
A. Edwards	*Supervisor*	North Bay.
S. J. Faught	*Supervisor*	North Bay.
J. Drinkwater	*Supervisor*	North Bay.
J. J. Campbell	*Chief Despatcher*	North Bay.
W. J. Douglas	*Road Foreman Locomotives*	North Bay.
W. J. Kelly	*Supt. Telegraph Construction*	North Bay.
Arthur A. Cole	*Mining Engineer*	Cobalt.
J. G. Kerry	*Consulting Engineer*	Toronto.

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION

General Remarks

Accounts and statistics for year ended October 31st, 1913, herewith:—
Mileage in operation on October 31st, 1913, was:—

	Miles.	
Main Line.		
North Bay to Cochrane	252.8	
		252.8
Branch Lines.		
Charlton Branch	7.8	
Kerr Lake Branch	3.9	
Porcupine Branch	33.2	
Elk Lake Branch	28.5	
Iroquois Falls Branch	7.24	
		80.64
Yards and Sidings.		
Yards and Sidings, Main and Branch Lines	98.69	
Liskeard Spur	0.64	
		99.33
Total Mileage		432.77

Following is condensed statement of Revenue Account for the fiscal year ended October 31st, 1913, compared with the year 1912. The sub-divisions of the condensed statement for 1913 are shown in detail in the financial part of this report:

	1913.	1912.
Revenue from Transportation	$1,567,228.43	$1,618,535.44
Revenue other than Transportation	88,926.22	88,914.63
Total Operating Revenue	$1,656,154.85	$1,707,450.07
Operating Expenses	1,477,550.01	1,384,697.69
Net Operating Revenue	$178,604.84	$322,752.38
Ore Royalties	$81,421.20	135,500.31
	$260,026.04	$458,252.69
Hire of Equipment, etc.	4,702.32	4,050.95
Total Earnings	$255,323.72	$454,201.74

Operating Expenses amount to 88.7 per cent. of the Gross Earnings, the Net Earnings to 11.3 per cent., as compared with 81.1 per cent. and 18.9 per cent. respectively for the twelve months ended October 31st, 1912.

Total of the pay-rolls for the year amounted to:—

Operation	$971,719.81
Construction and Additions and Betterments	246,753.23
Total	$1,218,473.04

Comparison of Pay-rolls since commencement of Operation:—

1905	$216,119.37
1906	450,214.02
1907	574,959.09
1908	687,541.66
1909	681,072.47
1910	878,192.07
1911	783,218.89
1912	1,090,310.65
1913	1,218,473.04
Total	$6,580,101.26

During past year, receipts from operation have decreased $51,295.22 and expenses of operation have increased $92,852.32.

Decreases in revenue are equally divided between passenger and freight, passenger decrease $23,632.36, freight decrease $22,988.50, and decrease in express earnings $4,839.77.

Increases in expenditures are Maintenance of Way, $83,856.03, Transportation Expenses, $3,516.75. General Expenses, $13,132.69 with decreases in Maintenance of Equipment, $7,049.29, Traffic Expenses, $603.86.

Maintenance of Way.

Commission has continued its policy of making ample provision for upkeep of the roadbed; renewal of rails, re-alignment of curves, ballasting, drainage, contributing the largest items of expense. Details of work will be found in report of Chief Engineer and Superintendent of Maintenance.

Maintenance of Equipment.

Commission has fully maintained rolling stock and mechanical equipment to highest standard of efficiency; in addition providing usual monthly charges for depreciation various classes of equipment.

Transportation Expenses.

While aggregate only shows increase $3,516.75, wages show increases, Station employees, $6,407.61, Road Enginemen, $3,062.40, Road Trainmen, $2,536.69, and fuel (due to increased cost), $18,531.90. Other increases and decreases, comparative statements in financial part of report will show.

Increased Cost of Labour.

On folios 16 to 20 of this report are tables of comparisons of wages received by trainmen, stationmen, telegraphers, maintenance of way and structures employees, 1905 to 1913 inclusive. These statements show, salaries of telegraphers have increased average aggregate of 44 per cent. and maintenance employees average of 21.9 per cent. It is impossible to give a percentage average increase for enginemen and trainmen, engineers now being paid on rates based on classification of locomotives instead of straight rate as in 1905, nevertheless, it may be remarked, passenger trainmen are now receiving 45 per cent. over 1905.

Mines—Minerals.

Only preliminary report included. Regular and complete report for year to December 31st, 1913, will be published separately.

Surveys—Construction.

Attention is directed to Chief Engineer's Report:—

Elk Lake Branch Construction.
Elk Lake extension to Gowganda Survey.
Gowganda, Sudbury Survey.
Iroquois Falls Branch Construction.

James Bay Surveys.

Investigations carried on during 1912 were continued, and Mr. J. G. McMillan's report is now published separately, embracing years 1912-1913.

Right of Way, etc.

Attention is directed to statement of land purchased, see page 140 of report.

Townsites.

Reports of Land Department in financial part of report are referred to as to what Commission has been enabled to do; further during year, tenders were invited (advertised) for unsold lots in various townsites, with exception of Cochrane. New subdivision was opened in Cobalt, 60 lots all of which have been sold.

Demonstration Car.

For third consecutive year, car again travelled through the Province, east, west, north and south, and with continued cordial co-operation of Department of Agriculture, exhibit of roots, grains, vegetables, cereals, were greater and better than ever. Over five hundred letters from prospective settlers during past year bear evidence as to interest awakened in the Great Northland, the garden of Ontario, future home of the happy and contented husbandman.

Counsel's Report.

Attention is directed to "Waldron *vs.* T. & N. O." which at close of fiscal year was in litigation. Commission being sued for $3,500.00 by J. M. Waldron for injuries said to have been received, it was alleged, by being forcibly ejected from passenger coach on train No. 53, August 20th, 1913, between South Porcupine and Timmins. Case was tried before His Honour Judge Latchford, Haileybury Assizes, November 1st. Jury was out from 5.45 p.m. until 8.30 p.m., and brought in verdict:

> "Conductor within his rights in demanding ticket, in compelling passenger "to go forward until ticket or fare was produced, and in order to remove "him from first class coach: that he did not use undue force in removing "him. No damages allowed to plaintiff."

Judge's order. Dismissed without costs.

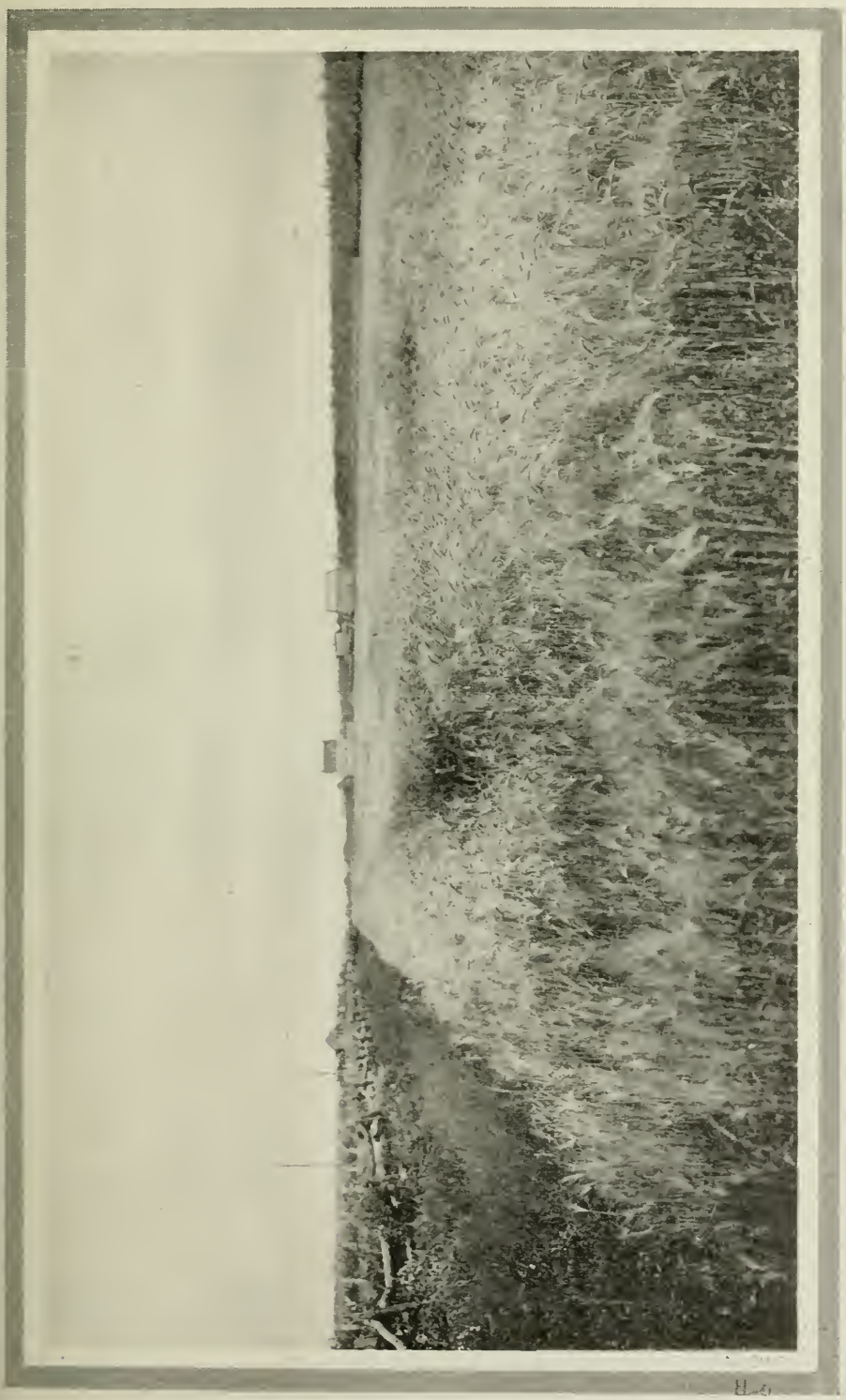
Agriculture.

Attention is directed to report of General Agent, folio —. During year, 938 farms, 148,780 acres, were taken up, many roads constructed; excursion to Experimental Farm, various Fall Fairs, and other important matters.

Tariff Rates.

Particular attention directed to Report of General Freight and Passenger Agent—note comparison, et al. T. & N. O. rates that are as low as those of any Railway in the Dominion, and in many instances, lower. This is particularly true and emphasized as to traffic originating on T. & N. O.—the forest products, et al. Tonnage—Traffic has been—is being created so to speak—the land opened up—the settlers et al. brought in, only with the thought of true settlement of the land, notwithstanding the low rates that are in effect and the maintenance of the Railway to the standard of the very best—Rails—Roadway—Rolling Stock. The first steel underframe cars were on the T. &. N. O. The first all steel passenger trains are now being constructed by the Pullman Company, Chicago. Ill. (The lowest tender.)

Safety First—has been the shibboleth of the T. & N. O. More than 4,180,462 passengers have been carried over the T. & N. O. and not one passenger has been killed. Providence has blessed the T. & N. O. as it has the Lands of the North. No lands are superior to the Lands of the North for the man or woman who has hands with shoulders and desires a homestead within the zone of a home market—as well as a zone of employment for the whole of the twelve months—with the advantage of settlement dues, and duties, that are virtually nominal, and yet returning to the people who are the owners of this Railway, a 2.6 per cent. of interest on the whole capital that has been invested since the opening of the Temiskaming and Northern Ontario Railway.



Farm of W. Mulverhill, Armstrong Township, 1913.

We have pleasure in directing attention to report of Edwards, Morgan & Company, Chartered Accountants, with reference to the accounts.

Toronto, Jan. 21, 1914.

J. L. Englehart, Esq.,

Chairman, Temiskaming & Northern Ontario Railway Commission,
Toronto, Ont.

Dear Sir:—

Under instructions from the Commissioners we have audited the Accounts of the Commission having reference to the Cash Receipts and Disbursements, Accounts Collectible, Accounts Payable, Agents' and Conductors' Accounts, Foreign Tickets, Foreign Freight, Car Mileage Accounts and Bank Balances. Our examination has covered the period from the 1st of November, 1912, to 31st of October, 1913.

We certify that all transactions relating thereto have been properly vouched, and that the Cash and Bank Balances have been duly accounted for. We have verified the balances of Accounts outstanding and have escertained that they correspond with the General Ledger Accounts.

We find the books in good order and all information asked for has been promptly given.

We are,

Yours faithfully,

(Signed) Edwards, Morgan & Co.

Insurance—Fire.

Buildings and Contents.

Division No. 1	$616,880	
Division No. 2	187,580	
Kerr Lake Branch	600	
Charlton Branch	9,100	
Porcupine Branch	89,550	
Elk Lake Branch	9,100	
		$912,810

Bridges and Trestles.

Division No. 1	$35,300	
Division No. 2	58,900	
Kerr Lake Branch	4,500	
Charlton Branch	11,000	
Porcupine Branch	13,300	
Elk Lake Branch	15,200	
		138,200

FREIGHT.

General Merchandise	$200,000	
		200,000

ROLLING STOCK.

Locomotive and Tenders	$453,400	
Passenger Equipment	315,000	
Freight Equipment	457,450	
Work Equipment	153,550	
Foreign Equipment	100,000	
		1,479,400
		$2,730,410

The rate on above insurance is $1.99 per $100 for a period of three years. Divided—Western Assurance Company, 50 per cent.; Home Insurance Company, 35 per cent.; Norwich Union Fire Insurance Society, 15 per cent.

COUNSEL'S REPORT—D. E. THOMSON, K.C.

Litigation.

At the close of the financial year the only action pending either by or against the Commission was a suit against the Commission by James Waldron, claiming $3,500 damages for alleged wrongful ejectment from passenger car.

Matters pending at the beginning of the year and since closed are the following:

Russ vs. T. & N. O. Settlement consummated and release obtained.

Cobalt Lake Mining Arbitration. Costs of arbitration were taxed in due course and matter closed.

T. & N. O. & Cobalt Townsite Co. vs. Konrady. Action to eject squatter from property covered by lease from the Commission to the Cobalt Townsite Mining Company. Judgment obtained against the defendant.

Accident Claims.

A number of claims by employees and other parties were made during the year. Some have been settled and others abandoned, but in no case, except those above mentioned, have writs been issued.

Damage Claims.

As usual a considerable number of claims have arisen in respect of freight, baggage, etc., lost, destroyed, delayed, mis-delivered or damaged. Most of these claims have been adjusted or abandoned, but several were still pending at the end of the year.

Agreements, Contracts, Etc.

A considerable number of agreements and contracts covering various matters between the Commission and others have been prepared and executed.

Empire Lumber Company.

Negotiations are pending for settlement of accounts and difference between the Commission and the Empire Lumber and Imperial Lumber Companies.

Mining Leases.

(*a*) Cobalt Townsite Mining Co. Limited. The mining lease in this case has been further amended by reducing the royalties to 1? per cent. on net profits.

(*b*) Cobalt Townsite Mining Co. Surface Rights. Negotiations pending for disposition of surface rights but no agreement consummated.

(*c*) City of Cobalt Mining Co. The mining lease in this case has been amended by reducing the royalties to 5 per cent. on net profits.

(*d*) Wright Mining Company. The lessee having failed to carry on continuous mining operations in accordance with the terms of the lease, the same has been cancelled. A lease of the surface rights of part of this property has been granted to the Coniagas Mines, Limited, and a lease of another part of the surface rights has been granted to the Buffalo Mines, Limited.

(*e*) Ontario Development Co. The lessee having failed to carry on continuous mining operations in accordance with the terms of the lease of lot No. 338, said lease has been cancelled.

Canadian Northern Railway Company.

Negotiations are still pending for settlement of agreement providing for the crossing of the Commission's line at North Bay.

North Bay Freight Yards.

A number of questions have arisen between the Commission and the Grand Trunk Railway during the year regarding the interpretation of certain clauses of the joint terminal agreement. These have all been satisfactorily adjusted.

Express Companies' Agreement.

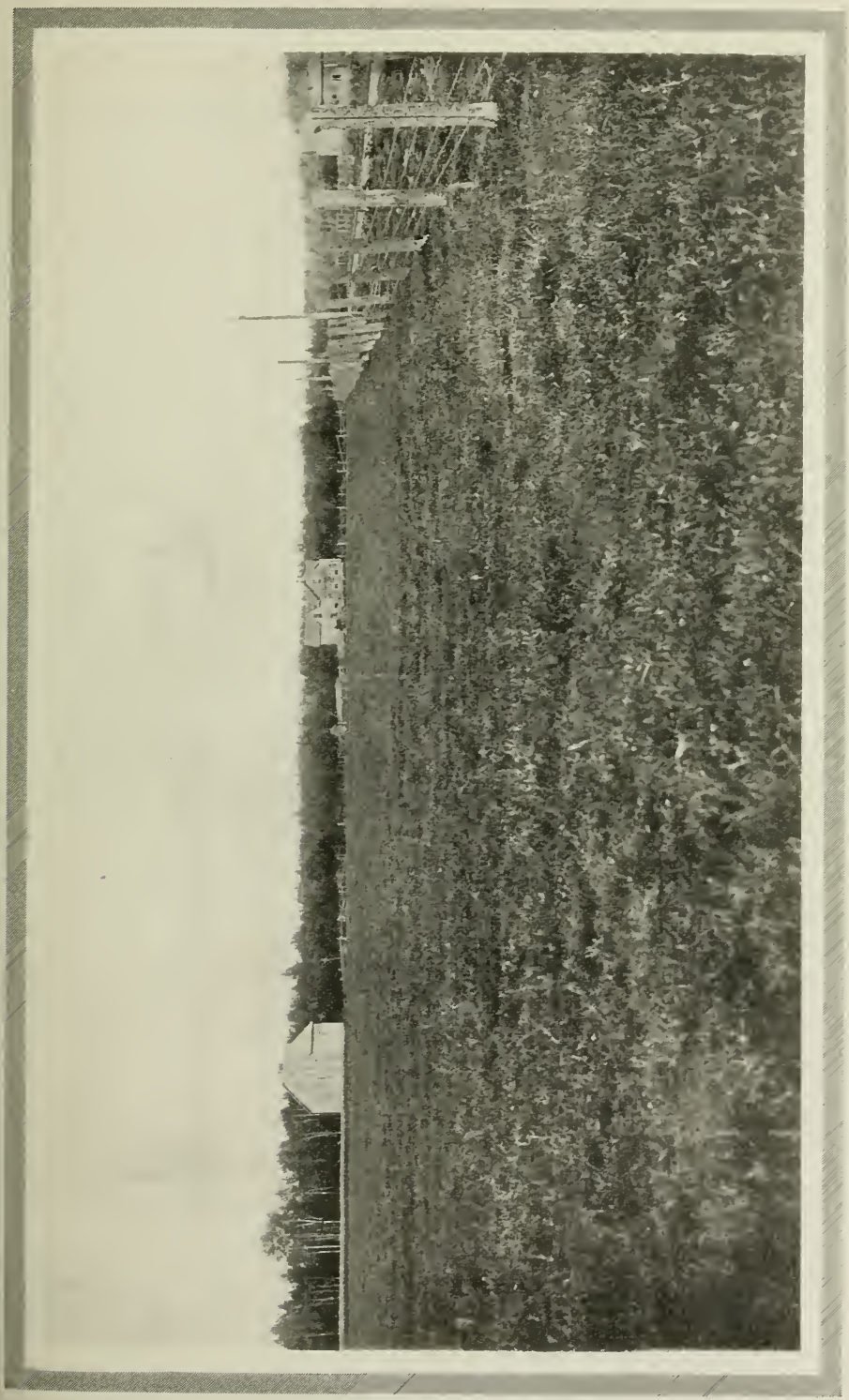
A supplemental agreement between the Commission and the Dominion and Canadian Express Companies has been entered into covering the audit of the accounts of the express agents by the Commission's auditors and providing for joint guarantee bonds for joint agents.

Nipissing Central Railway.

During the year, a deviation of the line at Haileybury was made. The necessary order sanctioning the deviation has been secured from the Dominion Board of Railway Commissioners.

Re Carroll Claim. Settlement effected for $600 and release obtained.

D. E. Thomson.



Farm of Wm. Netherton, Brentha, 1913.

Statement showing Comparison Wages paid

Location.	Occupation.	1905	1906		1907		1908	
		Rate per Month	Rate per Month	Per cent Inc'se	Rate per Month	Per cent Inc'se	Rate per Month	Per cent Inc'se
		$ c.	$ c.		$ c.		$ c.	
North Bay	Relv'g. Despatchers.	.....	.....	.....	105 00	.....	114 00	8.6
do	Desprs. 1st year	70 90	90 00	28.6	105 00	16.7	125 00	19.
do	do 2nd year	.....	100 00	.....	115 00	15.	125 00	8.7
do	do 3rd year	.....	.....	.....	115 00	.....	137 00	19.1
do	Operators, R.S. Off..	.....	.....	.....	.....	.....	.....	.....
North Bay Jct.	Agent	45 50	55 00	22.2	75 00	36.4	90 00	20.
do	Operators	.....	.....	.....	55 00	.....	60 00	9.1
Widdifield	Agent and Operator	40 00	45 00	12.5	45 00	.....	55 00	22.2
Tomiko	do do	40 00	45 00	12.5	45 00	.....	55 00	22.2
do	Night Operators	.....	.....	.....	45 00	.....	53 00	17.8
Diver	Agent and Operator	45 00	45 00	.....	50 00	11.1	55 00	10.
Redwater	Day Operator	40 00	45 00	12.5	45 00	.....	53 00	17.8
Temagami	Agent and Operator	55 00	65 00	18.2	65 00	.....	60 00	.....
Latchford	do do	45 00	55 00	22.2	70 00	27.3	80 00	14.3
do	Night Operator	.....	50 00	.....	55 00	5.	53 00	.....
Gillies Depot	Agent and Operator	.....	.....	.....	.....	.....	.....	.....
Cobalt	Agent	60 00	80 00	33.3	100 00	25.	110 00	10.
do	Opr. and Tk. Clerk.	45 00	60 00	33.3	60 00	.....	65 00	8.3
North Cobalt	Agent and Operator	.....	.....	.....	.....	.....	75 00	.....
Haileybury	Agent	60 00	70 00	16.7	70 00	.....	85 00	21.4
do	Opr. and Tk. Clerk.	45 00	60 00	33.3	60 00	.....	65 00	8.3
New Liskeard	Agent	70 00	70 00	.....	70 00	.....	90 00	28.6
do	Opr. and Tk. Clerk.	50 00	55 00	10.	60 00	9.1	65 00	8.3
do	Night Operator	.....	.....	.....	50 00	.....	60 00	20.
Uno Park	Agent and Operator	.....	55 00	.....	55 00	.....	55 00	.....
Thornloe	do do	.....	.....	.....	.....	.....	.....	.....
Earlton Jct.	do do	.....	55 00	.....	55 00	.....	55 00	.....
do	Operator	.....	.....	.....	.....	.....	.....	.....
Elk Lake	Agent and Operator	.....	.....	.....	.....	.....	.....	.....
Heaslip	do do	.....	.....	.....	55 00	.....	55 00	.....
Englehart	Agent	.....	70 00	.....	70 00	.....	75 00	7.1
do	Opr. and Tk. Clerk.	.....	55 00	.....	55 00	.....	60 00	9.1
do	Night Operator	.....	.....	.....	.....	.....	.....	.....
Charlton	Agent and Operator	.....	.....	.....	.....	.....	70 00	.....
Dane	do do	.....	.....	.....	.....	.....	60 00	.....
Swastika	do do	.....	.....	.....	.....	.....	.....	.....
Bourkes	Operator	.....	.....	.....	.....	.....	.....	.....
Matheson	Agent and Operator	.....	.....	.....	.....	.....	70 00	.....
Porquis Jct	do do	.....	.....	.....	.....	.....	.....	.....
Porcupine	do do	.....	.....	.....	.....	.....	.....	.....
do	Operator	.....	.....	.....	.....	.....	.....	.....
South Porcupine	Agent	.....	.....	.....	.....	.....	.....	.....
do	1st Operator	.....	.....	.....	.....	.....	.....	.....
do	2nd do	.....	.....	.....	.....	.....	.....	.....
Schumacher	Agent and Operator	.....	.....	.....	.....	.....	.....	.....
do	Operator	.....	.....	.....	.....	.....	.....	.....
Timmins	Agent	.....	.....	.....	.....	.....	.....	.....
do	Day Operator	.....	.....	.....	.....	.....	.....	.....
do	Night Operator	.....	.....	.....	.....	.....	.....	.....
Cochrane	Agent	.....	.....	.....	.....	.....	70 00	.....
do	Opr. and Tk. Clerk.	.....	.....	.....	.....	.....	.....	.....
do	Night Operator	.....	.....	.....	.....	.....	.....	.....
Minimum Monthly Salary, Agents		.....	.....	.....	45 00	.....	55 00	22.2
do do	Relv'g. Agents.	.....	.....	.....	45 00	.....	58 00	28.1
do do	Operators	.....	.....	.....	45 00	.....	53 00	17.8
do do	Relv'g. Operat'rs	.....	.....	.....	45 00	.....	53 00	17.8
Overtime Rate, Calls		45	45	.....	45	.....	50	.....
do do Hours		25	25	.....	25	.....	25	.....
Av'ge. per cent. increase all Telegraphers		.....	.....	18.3	.....	8.2	.....	12.6

N.B.—Working hours of Agents and Operators, 1905 to 1912, inclusive, 12 hours per day, reduced

Telegraphers, 1905 to 1913, inclusive.

1909		1910		1911		1912		1913		Aggregate 6 years Increases
Rate per Month	Per cent. Inc'se	Rate per Month	Per cent. Inc'se	Rate per Month	Per cent. Increase	Rate per Month.	Per cent. Increase	Rate per Month.	Per cent. Increase.	
$ c.		$ c.		$ c.		$ c.		$ c.		
114 00	.....	114 00	.....	119 00	Sun 18.3	119 00	Sun-	125 00	days 26.1	42.9
125 00	.....	120 00	.....	125 00	days 18.0	125 00	days	130 00	time 24.8	122.9
125 00	.....	125 00	.....	130 00	pro 17.2	130 00	pro	130 00	and 20.	56.
137 00	.....	142 00	3.6	142 00	rata 13.3	142 00	rata	150 00	half 26.8	56.5
75 00	.....	75 00	.....	75 00	.....	75 00	.....	95 00	26.7	26.7
90 00	.....	125 00	38.9	125 00	.....	125 00	.....	140 00	12.	211.1
60 00	.....	65 00	8.3	75 00	15.4	75 00	.....	83 00	10.7	50.9
55 00	.....	60 00	9.1	67 50	12.5	67 50	.....	74 50	10.4	86.2
55 00	.....	60 00	9.1	67 50	12.5	67 50	.....	74 50	10.4	86.2
53 00	.....	58 00	9.4	63 00	8.6	63 00	.....	68 00	7.9	51.1
55 00	.....	60 00	9.1	67 50	12.5	67 50	.....	74 50	10.4	65.6
53 00	.....	58 00	9.4	63 00	8.6	63 00	.....	68 00	7.9	70.0
60 00	.....	70 00	16.7	80 00	14.3	80 00	.....	80 00	.....	45.5
80 00	.....	85 00	6.3	90 00	5.9	90 00	.....	90 00	.....	100.
53 00	.....	58 00	9.4	63 00	8.6	63 00	.....	68 00	7.9	36.0
55 00	.....	60 00	9.1	67 50	12.5	67 50	.....	74 50	10.4	35.5
110 00	.....	135 00	22.7	135 00	.....	135 00	.....	150 00	11.1	150.
65 00	.....	70 00	7.7	85 00	21.4	85 00	.....	93 00	9.4	106.7
75 00	.....	75 00	.....	79 00	5.3	79 00	.....	81 00	2.5	8.
85 00	.....	112.50	32.4	125 00	11.1	125 00	.....	130 00	4.	116.7
65 00	.....	70 00	7.7	77 50	10.7	77 50	.....	84 00	8.4	86.7
90 00	.....	112 50	25.	135 00	20.	135 00	.....	135 00	.....	92.9
65 00	.....	70 00	7.7	77 50	10.7	77 50	.....	80 00	3.2	60.
60 00	.....	58 00	.....	63 00	8.6	63 00	.....	68 00	7.9	36.
55 00	.....	60 00	9.1	67 50	12.5	67 50	.....	74 50	10.4	35.5
55 00	.....	60 00	9.1	67 50	12.5	67 50	.....	74 50	10.4	35.5
55 00	.....	60.00	9.1	67 50	12.5	67 50	.....	79 50	17.8	44.5
.....	.....	58 00	.....	63 00	8.6	63 00	.....	68 00	7.9	17.2
.....	.....	.....	.....	.....	.....	.....	.....	95 00	.....	.....
55 00	.....	60 00	9.1	67 50	12.5	67 50	.....	74 50	10.4	35.5
75 00	.....	90 00	20.	100 00	11.1	100 00	.....	110 00	10.	57.1
60 00	.....	65 00	8.3	77 50	19.2	77 50	.....	90 00	16.1	63.6
60 00	.....	60 00	.....	70 00	16.7	70 00	.....	80 00	14.3	33.3
70 00	.....	85 00	21.4	95 00	11.8	95 00	.....	95 00	.....	35.7
60 00	.....	70 00	16.7	73 00	4.3	73 00	.....	75 50	3.4	25.8
.....	.....	.....	.....	73 00	.....	73 00	.....	81 00	11.	11.
.....	.....	.....	.....	63 00	.....	63 00	.....	68 00	7.9	7.9
70 00	.....	85 00	21.4	90 00	5.9	90 00	.....	95 00	7.1	35.7
.....	.....	.....	.....	75 00	.....	75 00	.....	77 50	3.3	3.3
.....	.....	.....	.....	85 00	.....	85 00	.....	90 00	5.9	5.9
.....	.....	.....	.....	63 00	.....	63 00	.....	68 00	7.9	7.9
.....	.....	.....	.....	110 00	.....	110 00	.....	110 00	.....	.....
.....	.....	.....	.....	75 00	.....	75 00	.....	80 00	6.7	6.7
.....	.....	.....	.....	63 00	.....	63 00	.....	68 00	7.9	7.9
.....	.....	.....	.....	85 00	.....	85 00	.....	95 00	11.8	11.8
.....	.....	.....	.....	63 00	.....	63 00	.....	68 00	7.9	7.9
.....	.....	.....	.....	85 00	.....	85 00	.....	100 00	17.6	17.6
.....	.....	.....	.....	63 00	.....	63 00	.....	68 00	7.9	7.9
.....	.....	.....	.....	63 00	.....	63 00	.....	68 00	7.9	7.9
70 00	.....	90 00	28.6	100 00	11.1	100 00	.....	105 00	5.	50.
60 00	.....	65 00	8.3	77 50	19.2	77 50	.....	87 50	12.9	45.8
.....	.....	.....	.....	63 00	.....	63 00	.....	68 00	7.9	7.9
55 00	.....	60 00	9.1	65 00	8.3	65 00	.....	74 50	14.6	65.6
58 00	.....	70 00	20.7	75 00	7.1	75 00	.....	78 00	4.	75.6
53 00	.....	58 00	9.4	63 00	8.6	63 00	.....	68 00	4.	51.1
53 00	.....	60 00	13.2	65 00	8.3	65 00	.....	68 00	4.6	51.1
50	.....	50	.....	50	.....	50	.....	50	.....	.....
25	.....	25	.....	30	20.	30 tim	e & half	30	time & half	.....
.....	.....	.....	11.	.....	11.5	.....	.....	.....	8.1	44.3

to ten hours per day, 1913, and eight hours per day for Operators, North Bay Junction.

Statement showing Comparison Wages paid Trainmen

Occupation	Class of Service.	1905 Rate per 100 miles.	1906 Rate per 100 miles.	1906 Per cent. Increase	1907 Rate per 100 miles.	1907 Per cent. Increase
		$ c.	$ c.		$ c.	
Conductors ..	Passenger	3 00	3 00	.....	2 44	.....
do ...	Way Freight	3 00	3 00	.....	3 50	16.7
do ...	Through Freight	3 00	3 00	.....	3 10	3.3
do ...	Pickup	3 00	3 00	.....	3 10	3.3
do ...	Work and Snowplow	3 00	3 00	.....	3 10	3.3
do ...	North Bay Yard, Day	3 00	3 00	.....	3 10	3.3
do ...	do Night	3 00	3 00	.....	3 10	3.3
do ...	Other Yards, Day	3 00	3 00	.....	3 10	3.3
do ...	do Night	3 00	3 00	.....	3 10	3.3
Baggagemen...	Passenger Train	2 00	2 00	.....	1.4152	.....
Brakemen	do do	2 00	2 00	.....	1.2932	.....
do	Way Freight	2 00	2 00	.....	2 & 2 45	11.2
do	Through Freight	2 00	2 00	.....	1 65–2 07	.....
do	Pickup	2 00	2 00	.....	1 65–2 07	.....
do	Work and Snowplow	2 00	2 00	.....	1 65–2 07	.....
do	North Bay Yard, Day	2 00	2 00	.....	1 65–2 07	.....
do	do Night	2 00	2 00	.....	1 65–2 07	.....
do	Other Yards, Day	2 00	2 00	.....	1 65–2 07	.....
do	do Night	2 00	2 00	.....	1 65–2 07	.....
Engineers	Passenger (109-110)	2 75	2 75–3 40	23.6	3 40	.....
do	do (less than 125%)	2 75	2 75–3 40	23.6	3 40	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Way Freight (109-110)	3 30	3 30–3 55	7.6	3 55	.....
do	do (less than 125%)	3 30	3 30–3 55	7.6	3 55	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Th. Freight (109-110)	3 30	3 30–3 55	7.6	3 55	.....
do	do (less than 125%)	3 30	3 30–3 55	7.6	3 55	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Work Train (109-110)	3 30	3 30–3 55	7.6	3 55	.....
do	do (less than 125%)	3 30	3 30–3 55	7.6	3 55	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Yard	3 30	3 30–3 55	7.6	3 55	.....
do	Repairs and Watching	1 50	1 50	.....	1 50	.....
Firemen	Passenger (109-110)	2 00	2 00–2 10	5.	2 10	.....
do	do (less than 125%)	2 00	2 00–2 10	5.	2 10	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Way Freight (109-110)	2 00	2 00–2 20	10.	2 20	.....
do	do (less than 125%)	2 00	2 00–2 20	10.	2 20	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Th. Freight (109-110)	2 00	2 00–2 20	10.	2 20	.....
do	do (less than 125%)	2 00	2 00–2 20	10.	2 20	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Work Train (109-110)	2 00	2 00–2 20	10.	2 20	.....
do	do (less than 125%)	2 00	2 00–2 20	10.	2 20	.....
do	do (more than 125%)	.....	.....	.....	.....	.....
do	do (Consolidation)	.....	.....	.....	.....	.....
do	Yard	2 00	2 00–2 20	10.	2 20	.....
do	Repairs and Watching	1 50	1 50–	.....	1 50	.....
Average per cent. Increase,	Conductors	.....	.....	.....	.....	2.4
do do	Brakemen	.....	.....	.....	.....	.....
do do	Engineers	.....	.....	10.1	.....	.....
do do	Firemen	.....	.....	8.2	.....	.....
do do	Trainmen and Enginemen	.....	.....	4.8	.....	.....

Decrease in rate for Conductors and Brakesmen in Passenger Service due to increased speed of approximately 45% in amounts

and Enginemen, 1905 to 1913, inclusive.

1908		1909		1910		1911		1912		1913		
Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	Rate per 100 miles.	Per cent. Increase.	6 years Aggregate Increase.
$ c.		$ c.		$ c.		$ c.		$ c.		$ c.		
2 44	.....	2 44	.....	2 44	.....	2 68	9.8	2 68	.....	2 68	....	.....
3 50	.....	3 50	.....	3 50	.....	3 97½	13.6	3 97½	.....	3 97½	....	32.5
3 10	.....	3 10	.....	3 10	.....	3 63	17.1	3 63	.....	3 63	....	21
3 10	.....	3 10	.....	3 10	.....	3 80	22.6	3 80	.....	3 80	....	26.7
3 10	.....	3 10	.....	3 10	.....	3 63	17.1	3 63	.....	3 63	....	21
3 10	.....	3 10	.....	3 10	.....	3 70	19.4	3 70	.....	3 70	....	23.3
3 10	.....	3 10	.....	3 10	.....	3 90	25.8	3 90	.....	3 90	....	30
3 10	.....	3 10	.....	3 10	.....	3 60	16.1	3 60	.....	3 60	....	20
3 10	.....	3 10	.....	3 10	.....	3 80	22.6	3 80	.....	3 80	....	26.7
1.4152	.....	1.4152	.....	1.4152	.....	1 55	9.5	1 55	.....	1 55	....	.....
1.2932	.....	1.2932	.....	1.2932	.....	1 50	16	1 50	.....	1 50	....	.....
2 & 2 45	.....	2 & 2 45	.....	2 45	10.1	2 70	10.2	2 70	.....	2 70	....	35
1 65–2 07	.....	1 65–2 07	.....	2 07	11.3	2 42	16.9	2 42	.....	2 42	....	21
1 65–2 07	.....	1 65–2 07	.....	2 07	11.3	2 56	23.7	2 56	.....	2 56	....	28
1 65–2 07	.....	1 65–2 07	.....	2 07	11.3	2 42	16.9	2 42	.....	2 42	....	21
1 65–2 07	.....	1 65–2 07	.....	2 60	39.8	3 40	30.8	3 40	.....	3 40	....	70
1 65–2 07	.....	1 65–2 07	.....	2 60	39.8	3 60	38.5	3 60	.....	3 60	....	80
1 65–2 07	.....	1 65–2 07	.....	2 60	39.8	3 30	26.9	3 30	.....	3 30	....	65
1 65–2 07	.....	1 65–2 07	.....	2 60	39.8	3 50	34.6	3 50	.....	3 50	....	75
3 55	4.4	3 55	.....	3 55	.....	3 74	5.3	3 74	.....	4 11	9.9	49.5
3 55	4.4	3 55	.....	3 55	.....	3 80	7	3 80	.....	4 18	10	52
.....	.....	.....	.....	.....	.....	3 90	.....	3 90	.....	4 29	10	10
.....	.....	.....	.....	.....	.....	.....	.....	4 07	.....	4 48	10	10
4 15	16.9	4 15	.....	4 15	.....	4 40	6	4 40	.....	4 84	10	46.7
4 15	16.9	4 15	.....	4 15	.....	4 50	8.4	4 50	.....	4 95	10	50
.....	.....	.....	.....	.....	.....	4 65	.....	4 65	.....	5 11	9.9	9.9
.....	.....	.....	.....	.....	.....	.....	.....	4 90	.....	5 39	10	10
3 95	11.3	3 95	.....	3 95	.....	4 12	4.3	4 12	.....	4 53	10	37.3
3 95	11.3	3 95	.....	3 95	.....	4 23	7.1	4 23	.....	4 65	10	40.9
.....	.....	.....	.....	.....	.....	4 35	.....	4 35	.....	4 79	10	10
.....	.....	.....	.....	.....	.....	.....	.....	4 51	.....	4 96	10	10
3 65	2.8	3 65	.....	3 65	.....	3 80	4.1	3 80	.....	4 18	10	26.7
3 65	2.8	3 65	.....	3 65	.....	3 90	6.8	3 90	.....	4 29	10	30
.....	.....	.....	.....	.....	.....	4 00	.....	4 00	.....	4 40	10	10
.....	.....	.....	.....	.....	.....	.....	.....	4 29	.....	4 73	10.3	10.3
3 50	.....	3 50	.....	3 50	.....	3 90	11.4	3 90	.....	4 29	10	30
3 50	133.3	3 50	.....	3 50	.....	3 85	10	3 85	.....	4 25	10.4	183.3
2 20	4.8	2 20	.....	2 20	.....	2 25	2.3	2 25	.....	2 25	....	12.5
2 20	4.8	2 20	.....	2 20	.....	2 42	10	2 42	.....	2 42	....	21
.....	.....	.....	.....	.....	.....	2 53	.....	2 53	.....	2 53	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2 70	.....	2 70	....	.....
2 60	18.2	2 60	.....	2 60	.....	2 60	.....	2 60	.....	2 60	....	30
2 60	18.2	2 60	.....	2 60	.....	2 80	7.7	2 80	.....	2 80	....	40
.....	.....	.....	.....	.....	.....	3 00	.....	3 00	.....	3 00	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	3 15	.....	3 15	....	.....
2 30	4.5	2 30	.....	2 30	.....	2 53	10	2 53	.....	2 53	....	26.5
2 30	4.5	2 30	.....	2.30	.....	2 64	14.8	2 64	.....	2 64	....	32
.....	.....	.....	.....	.....	.....	2 75	.....	2 75	.....	2 75	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2 97	.....	2 97	....	.....
2 30	4.5	2 30	.....	2 30	.....	2 37	3	2 37	.....	2 37	....	18.5
2 30	4.5	2 30	.....	2 30	.....	2 48	7.8	2 48	.....	2 48	....	24
.....	.....	.....	.....	.....	.....	2 58	.....	2 58	.....	2 58	....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2 80	.....	2 80	....	.....
2 20	.....	2 20	.....	2 20	.....	2 45	11.4	2 45	.....	2 45	....	22.5
2 50	66.7	2 50	.....	2 50	.....	2 50	.....	2 50	.....	2 50	....	66.7
.....	.....	.....	.....	.....	.....	.....	18.4	.....	.....	.....	....	21.2
.....	.....	.....	.....	.....	21.2	.....	23.8	.....	.....	.....	....	34.7
.....	13.4	.....	.....	.....	.....	.....	7	.....	.....	.....	10	27.3
.....	11.4	.....	.....	.....	.....	.....	6.6	.....	.....	.....	....	13.2
.....	6.9	.....	.....	.....	3.6	.....	13.1	.....	.....	.....	4.1	23.3

trains, longer divisions and consequent greater mileage made by crews, making an increase of earned at present over year 1905.

Statement Shewing Comparison Maintenance of Way Employees, 1905 to 1913 inclusive

Occupation.	1905 Per Hour.	1906 Per Hour.	1907 Per Hour.	1908 Per Hour.	1909 Per Hour.	1910 Per Hour.	1911 Per Hour.	1912 Per Hour.	1913 Per Hour.	Per cent. Increase.
Yard Foremen, North Bay	.22½–25	22½–25	.22½–25	.22½–25	.25 –25½	.25½	.25½–29½	.29½	.29½	22.1
" " Latchford	.19 –22½	19 –22½	.19 –22½	.19 –22½	.22½–23	.23–24	.24 –27½	.27½	.27½	32.5
" " Cobalt	.19 –22½	19 .22½	.19 –22½	.19.22½, 23½	.23½–24	.24	.24 –27½	.27½	.27½	32.5
" " Haileybury	.19 –22½	19 –22½	.19 –22½	.19 –22½	.22½–24	.24	.24 –27½	.27½	.27½	32.5
" " New Liskeard	.22½–25	22½–25	.22½–25	.22½–23½	.23½–24	.24	.24 –27½	.27½	.27½	15.8
" " Englehart	.....	.25	.25	.25	.25 –25½	.25½	.25½–29½	.29½	.29½	16.
" " Matheson	.....	.....	.22½	.22½–23½	.23½–24	.24	.24 –27½	.27½	.27½	22.2
" " Cochrane	.....	.....	.....	.....	.25 –25½	.25½	.25½–29½	.29½	.29½	16.8
All other Section Foremen	.19 –22½	19 –22½	.19 –22½	.19 –22½	.22½–23	.23½	.23½–26½	.26½	.26½	27.2
Assistant Yard Foremen	.....	20 –22½	.20 –22½	.20 –22½	.20 –22½	.22½	.22½–25½	.25½	.25½	20.
Extra Gang Foremen	22½ to 30	22½ to 30	22½ to 30	22½ to 30	22½ to 32½	30 to 36½	30 to 36½	30 to 36½	30 to 39½	32.4
Pit and Ditcher Foremen	.....	.....	32½	32½	80. & 90.	80.00	80. & 85	85.00	90.00 per month.	
Assistant Extra Gang Foremen	20 to 22½	20 to 22½	20 to 22½	20 to 22½	20 to 22½	22½ to 25	22½ to 25	22½ to 25	22½ to 25	11.8
Sectionmen	14 to 17½	15 to 17½	15 to 17½	15 to 17½	15 to 16½	16½	16½ to 19	19	19	20.6
Extra Gang Laborers	15 to 20	15 to 20	15 to 20	15 to 20	15 to 20	17½	17½	17½ to 19	19 to 20	11.4
Snowplow and Flanger Foremen	.....	29 to 29½	29 to 29½	29 to 29½	29½ to 33	33	33 to 37	37	37	26.5
B. and B. Foremen	25 to 35	25 to 35	25 to 35	25 to 35	25 to 35	25 to 32½	25 to 37	33½ to 37	33½ to 37	17.5
Bridgemen	20 to 22½	20 to 22½	20 to 22½	20 to 22½	20 to 22½	25	23 to 29	23 to 29	23 to 29	22.4
Carpenters	22½ to 27½	22½ to 27½	22½ to 27½	22½ to 27½	22½ to 27½	22½ to 25	22½ to 29	23 to 29	23 to 29	4.
Bridge Laborers and Handymen	15 to 17½	15 to 17½	15 to 17½	15 to 17½	15 to 17½	15 to 22½	15 to 22½	20 to 22½	20 to 22½	30.8
Average Increase all Maintenance of Way Employees	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.9

ANNUAL REPORT OF CHIEF ENGINEER AND SUPERINTENDENT OF MAINTENANCE

S. B. CLEMENT, C.E. & S. OF M.

Year Ending October 31st, 1913.

A. J. McGEE, ESQ.,

Secretary-Treasurer,

Toronto, Ontario.

DEAR SIR,—I beg to submit the following report on construction, maintenance of way and maintenance of equipment, for the year ending October 31st, 1913.

Construction

Elk Lake Branch:

At the beginning of the year the Elk Lake Branch was under construction, Messrs. McCaffrey & McQuigge having contracts for the grading and tracklaying. In December, 1912, all the grading on the branch was completed and track was laid to the Montreal River crossing. As there would be considerable delay waiting on the erection of the bridge across the Montreal River, and it was considered desirable to proceed with the tracklaying and ballasting from the Montreal River to Elk Lake immediately on the completion of the bridge, and operate a freight and passenger service from Earlton to Elk Lake, it was necessary to take the work out of the hands of the contractors. This was done and a regular service between Earlton and Elk Lake was inaugurated February 5th, 1913.

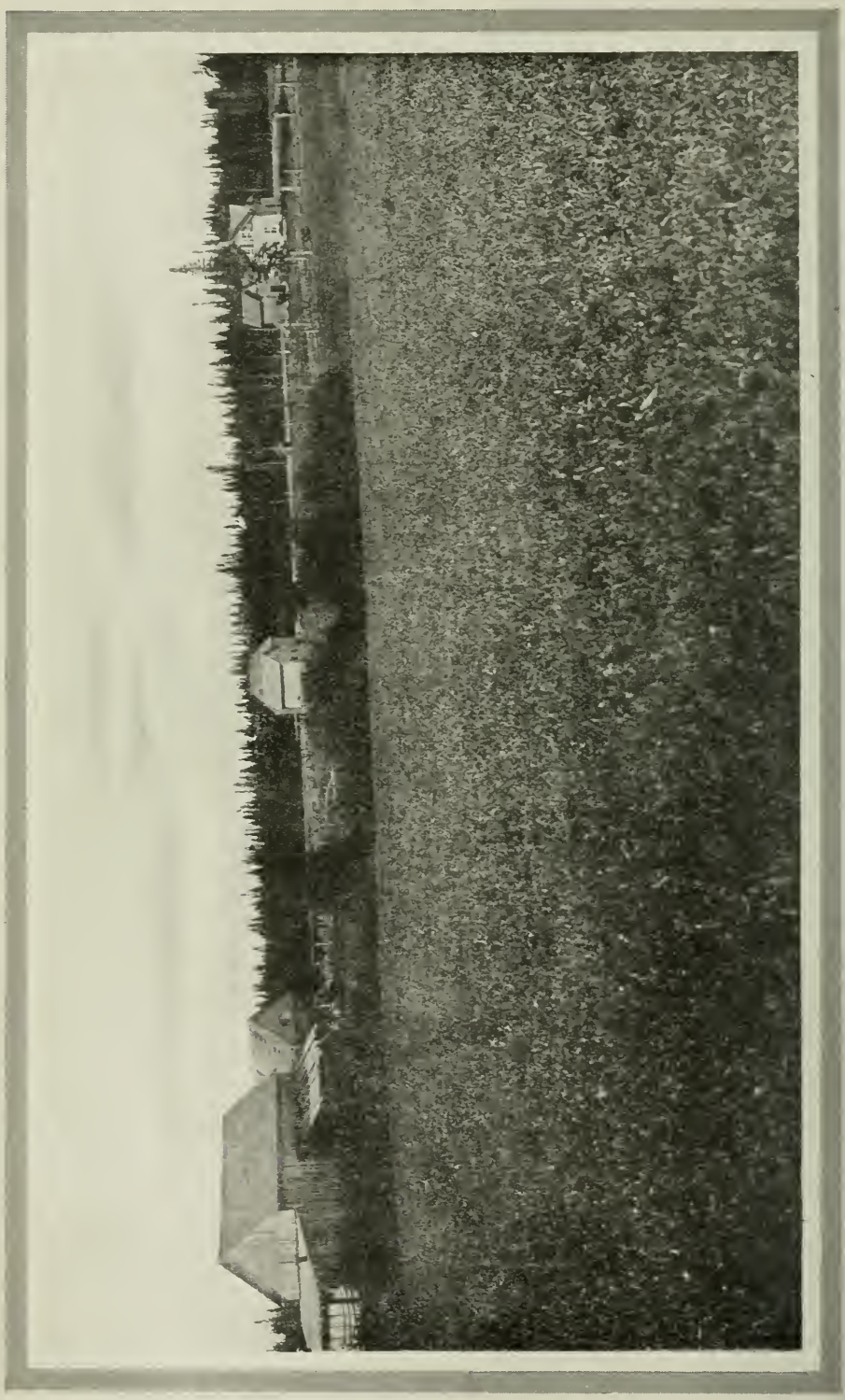
The tracklaying, ballasting and train-filling were completed by the Road Department. The section houses, tool houses, water stations, station buildings were built by the Bridge and Building Department. Sixteen miles of right of way was fenced by contract.

Elk Lake Branch Extension to Gowganda—Surveys:

In the years 1909 and 1910 an extension of the Charlton Branch had been located from Charlton to Elk Lake and thence to Gowganda. It was found that a more favorable location than this between Elk Lake and Gowganda could be obtained, and another location was made as an extension of the Elk Lake Branch. This location, leaving Elk Lake, follows the west branch of Bear Creek, keeping several miles to the south of the older location, and as regards length, grades, curvature and cost is more favorable.

The development of the Gowganda Mining Camp has not yet been sufficient to warrant the construction of this extension.

During the summer of 1913, Mr. W. R. Maher, one of the Commission's locating engineers, made a careful and complete reconnaissance of the area between Gowganda and Sudbury. Considerable prospecting has been done in certain sections, and the effect of the future development of mineral discoveries, on a railway location to best serve this area and provide a shorter connection between Sudbury and Gowganda and Temiskaming Districts, has been considered.



Farm of W. Netherton, Brentha, 1913.

Iroquois Falls Branch:

A branch line of railway has been built from Porquis Junction on the main line to Iroquois Falls on the Abitibi River. The contract for clearing right of way was awarded the Abitibi Pulp and Paper Company, and the contract for grading to Messrs. MacDougall and McCluskey, Cochrane. Tracklaying and ballasting were done by Company forces. The length of the branch is 6¼ miles. From the Iroquois Falls terminus a private spur siding has been built to the Abitibi Pulp and Paper Company's mill, and will be operated and maintained by the Pulp Company.

The branch was so far completed as to permit the operation of a freight service on September 9th, 1913, and large quantities of material for the construction of the Company's plant have been handled.

James Bay Surveys:

The investigations the Commission had carried on at the mouth of the Moose River were continued. Mr. J. G. McMillan left Cochrane for Moose Factory in March, returning in August. His observations at the time of the spring floods were particularly valuable. A separate report has been published containing the results of Mr. McMillan's surveys and investigations at the estuary of the Moose River, and Mr. Maher's reconnaissance for a railway location between Cochrane and Moose Factory. The information contained in this report clearly indicates the nature of the work involved in the development of a harbor at Moose Factory, and the extension of the railway from Cochrane to Moose Factory.

ADDITIONS AND BETTERMENTS.

An independent track for passenger service has been constructed between North Bay Junction yard office and Canadian Pacific Railway passenger station, North Bay.

New passing sidings were constructed at Owaissa, capacity 70 cars, and Minaki. capacity 92 cars.

Spur sidings for accommodation of settlers in shipping pulpwood, were constructed at Nahma, Monteith (M.P. 217) and M.P. 13¾, Elk Lake Branch.

Nine new industrial sidings were constructed and four were extended.

18,796 feet or 3.56 miles of T. & N. O. Railway sidings and 4,823 feet or 0.91 miles of private industrial sidings were constructed during the year.

A new freight shed 30 ft. x 60 ft. was built at South Porcupine, and the local freight delivery tracks were moved to suit.

A new ice-house 25 ft. x 75 ft. was built at Cochrane.

A new water station is under construction at Minaki. Water stations at Widdifield, Tomiko and Timagami, were improved by removing pumps and boilers from the tank to independent buildings.

The passenger station and freight shed at Earlton were destroyed by fire. New and enlarged station and shed are now under construction.

A new frame Maintenance of Way Department store-house, 30 ft. x 150 ft., was built at North Bay Junction. This storehouse and adjoining storage yard provide excellent accommodation for all Maintenance of Way materials.

The telephone-train despatching system on the main line and Porcupine Branch was completed and placed in operation.

The long distance telephone system has been extended along the Elk Lake Branch from Earlton to Elk Lake, and the Kirkland Lake Mining Camp has been given a connection by means of a pole line from Swastika, a distance of six (6) miles. Connections have been made with the Timiskaming Telephone Company, at Cobalt, and New Liskeard, permitting the interchange of long distance business.

MAINTENANCE OF EQUIPMENT.

During the year the rolling stock and mechanical equipment have been fully maintained in serviceable condition. The accompanying report of the Master Mechanic shows in detail the nature and extent of all repairs. Considerable attention and study have been given the question of enlarging the general repair shops at North Bay. Plans for adequate extensions are now being prepared. The accompanying report of the Master Mechanic contains full statements of equipment in service and repairs to same during the year.

MAINTENANCE OF WAY.

As a result of the Commission's policy of making ample provision for maintenance and betterments, the permanent way has not only been maintained in serviceable condition, but very decided improvements have been made, and the permanent way has been brought to a standard that is very creditable to the management.

147,868 cross-ties and fifty-six sets of switch ties were used during the year for renewals.

22.33 miles of main track were relaid with new eighty-lb. steel rails. This track was originally laid in 1903 and 1904.

65,150 additional tie-plates were placed in the track.

17,717 lineal feet or 3.25 miles of tile under drains were laid to drain roadbed.

40.5 miles of main track were reballasted with 38,000 cubic yards of gravel ballast.

46.5 miles of main track were re-aligned with all curves to standard easements.

On thirty miles of track all ditches in clay cuts were cleaned and enlarged with steam ditcher.

9.56 miles of right of way fence were repaired and 7.7 miles of new fence were built.

1,490 lineal feet of timber trestle were replaced by embankment.

Large timber trestles at Boston Creek and Wild Goose Creek are now being replaced by heavy steel viaducts.

The complete reports of the General Roadmaster, Bridge and Building Master, and Supervisor of Telegraphs, are attached. These contain full details of all work undertaken during the year by the Road Department, Bridge and Building Department, and Telegraph and Telephone Department.

Respectfully submitted.

North Bay, Ontario,
December 13th, 1913.

S. B. Clement, C.E. & S. of M.

Accidents.

The following is a list of personal injuries relating to Departments under my jurisdiction, occurring during the year:

1912.

November 5th, R. G. Reid, freight car carpenter, at North Bay Junction, while changing bits in a wood boring machine, was badly cut.

December 19th, Wm. Harvey, sectionman at M.P. 178.8, jumped from a hand car and broke a rib in his left side.

1913.

January 18th, Wm. Drolet, chore boy at Iroquois Falls, while getting water for the boarding camp from tender of engine No. 105, slipped and fell off the tender, sustaining slight injuries.

January 24th, A. Dicnicola, sectionman at Matheson, was slightly injured in hip by a piece of coal falling from a passing engine.

February 14th, John Greco, temporarily employed as watchman at Montreal River Bridge, was slightly burnt in the face by a falling cinder.

February 26th, R. W. Beddingfield, steam shovel cranesman, was struck in the ankle by a piece of frozen gravel and slightly injured.

February 22nd, Robert McKay, hostler assistant, North Bay Junction, fell off a tender and sprained his ankle.

March 1st, George Smart, machinist, North Bay Junction, had two fingers crushed in gears of machine in motion.

April 3rd, F. Galluccio, sectionman, Timagami, had his left eye slightly injured by a small piece of flying steel.

April 9th, Frank Alberta, laborer, North Bay Junction, was injured in fleshy part of leg by a piece of steel flying from a cold sett.

April 25th, George Gray, sectionman, New Liskeard, had two fingers of right hand caught between switch point and stock rail, making amputation of both at first joint necessary.

May 3rd, C. M. Stokes, carpenter, North Bay, while fighting fire on roof of Englehart Station, fell and hurt his head and shoulder.

June 12th, Olen Kexrine, sectionman, North Bay, fell off a moving hand-car and was slightly injured.

June 19th, M. Sammon, carpenter, North Bay, while helping to tear down a trestle on the Kerr Lake Branch, had his collar bone broken by being struck with a piece of timber.

June 21st, M. Borswelli, laborer, at ballast pit, was cut under the eye by a piece of steel flying from a wedge.

July 1st, A. T. Woodward, laborer, Cochrane, while handling ice, fell into a crevice and sprained his leg.

July 4th, W. Heitman, Machinist, North Bay, was repairing stand pipe, when he fell sustaining slight injuries.

July 8th, J. Lipski, sectionman, Iroquois Falls, fell in front of hand-car on which he was riding and was slightly injured.

August 2nd, H. Wicks, carpenter, North Bay, had one finger and thumb cut by a wood-working machine.

August 9th, C. Myperi, sectionman, Latchford, had left leg broken and head injured by hand-car which was struck by passing train and thrown over on top of him.

September 1st, V. Leduc, laborer on steam ditching machine, slightly injured his back in jumping from one flat car to another.

September 2nd, Dominico Gianfrancesco, laborer, North Bay, had his left arm lacerated, while loading a large piece of rock on a dump cart.

MILEAGE IN OPERATION

October 31st, 1913.

Main Line.

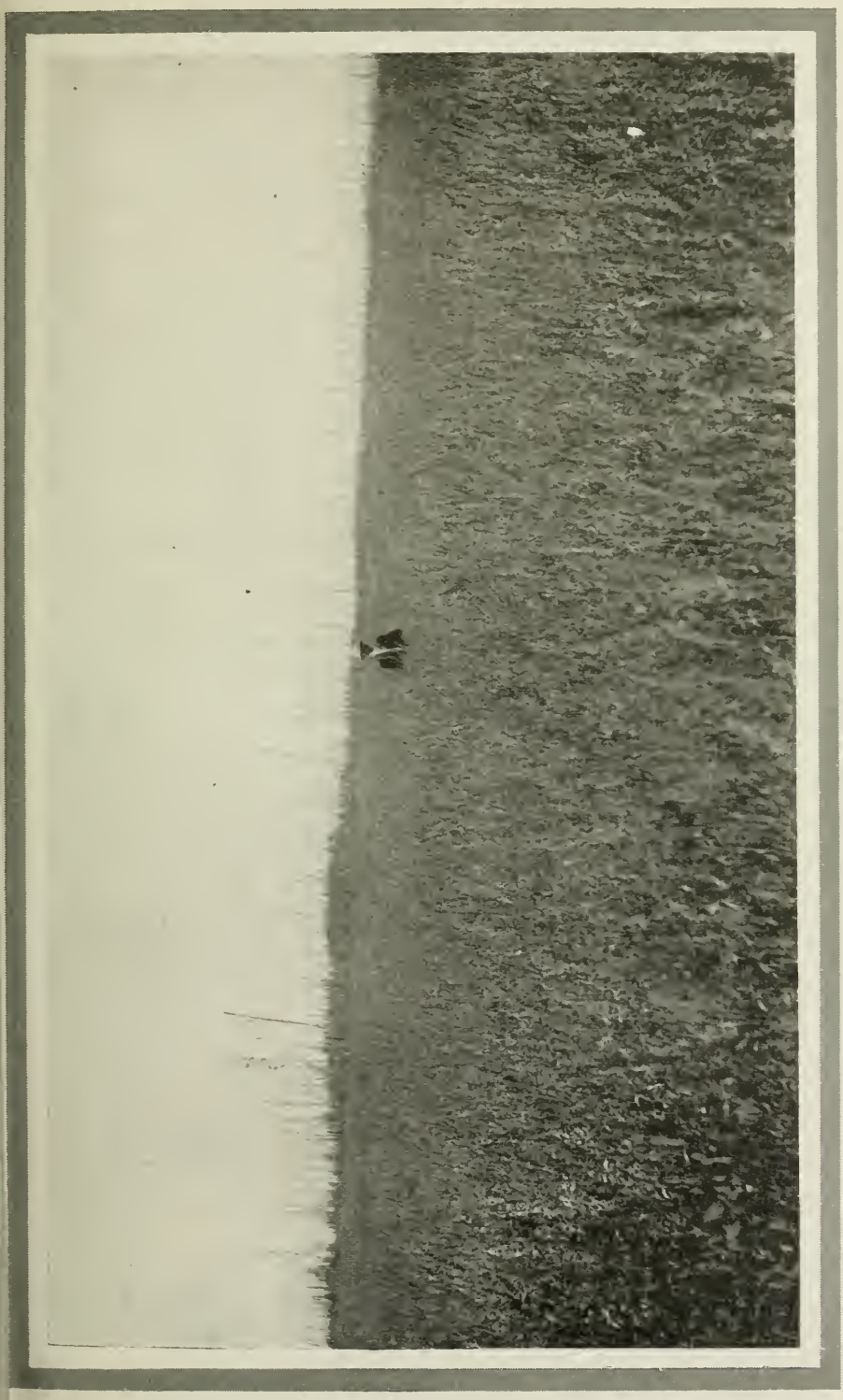
	Miles.	
North Bay to Cochrane	252.8	
		252.8

Branch Lines.

Charlton Branch	7.8	
Kerr Lake Branch	3.9	
Porcupine Sub-division	40.44	
Elk Lake Branch	28.5	
		80.64

Yards and Sidings.

Yards and Sidings, Main and Branch Lines	98.69	
Liskeard Spur	0.64	
		99.33
Total Mileage		432.77



Oat Field, near Englehart, 1913.

MOTIVE POWER AND CAR DEPARTMENT

Annual Report for the Year Ending October 31st, 1913, of Mr. T. Ross, Master Mechanic.

New Rolling Stock.

Electric Cars for Nipissing Central Railway.

In January, two street cars were received from the Preston Car and Coach Company. These are of the double end, interurban type, 47 feet 6 inches long over all, arranged with smoking compartment, and have seating capacity for fifty people.

In June, 1913, a combination car was received from the Russell Car and Snow Plow Company, Ridgeway, Pa., for use as switching locomotive, baggage and express car, and snow plow. It is of the double end type, equipped with detachable snow plows at each end, four 75 h.p. motors, and weighs complete without plows, 52,000 lbs.

New Passenger Cars.

A further addition to the passenger equipment of the Temiskaming and Northern Ontario Railway being found necessary, a contract was let in June to the Pullman Company for thirteen cars, comprising three mail and express cars, two baggage cars, two second class cars, three combination first and second class smoking cars, and three first class cars. These cars are to be of modern steel construction, equipped with six wheel steel trucks and electric lighted throughout.

Electrical Work.

The new carpenter shop of the Bridge and Building Department and Road Department storehouse at North Bay Junction have been equipped with the necessary wiring and electrical equipment for lighting service. New electric meter has been installed at the stock yards and also at the ice house. Necessary repairs have been made to the electrical plant and equipment at North Bay Junction to keep them in good running order. Alterations on transmission line to general office building have been made in connection with new C.P.R. entrance.

Electric lights have been installed in section house at Cobalt, and general electrical repairs in station, freight shed and agent's house have been attended to.

At Kerr Lake the station has been equipped with electric lights.

Electric lights have been installed in station and freight shed at North Cobalt.

At Haileybury and New Liskeard the electrical equipment has been gone over from time to time, and necessary repairs and renewals made.

The station at Elk Lake has been wired and electric lights installed.

The ice house at Englehart has been furnished with electric lights. The electrical equipment in station, freight shed, greenhouse, tenement and section houses, round house and bunk room have had necessary maintenance repairs and renewals. Generator and entire plant and transmission line have been kept in good repair.

The station and freight shed at Charlton have been wired and installed with electric lights.

At South Porcupine, the freight shed has been installed with electric lights, and general electrical repairs have been made in station.

The Agent's house at Schumacher has also been installed with electric lights.

At Timmins, general repairs have been made to electrical equipment in station, freight shed, and engine house, but no new equipment has been installed at this station.

At Cochrane, the necessary maintenance repairs and renewals have been taken care of.

In addition to the above work, the electric headlights on all engines, snow plows, and wrecking cranes, have been maintained in good condition throughout the year.

The following tabulated statement shows a comparison of the number of kilowatt hours used each month at North Bay, Englehart and Cochrane, during the years 1911, 1912 and 1913.

Month.	NORTH BAY			ENGLEHART			COCHRANE		
	1911	1912	1913	1911	1912	1913	1911	1912	1913
January	5,261	8,574	9,979	6,160	6,590	6,480	1,251	3,034	1,437
February ...	4,168	6,225	7,063	5,316	5,785	6,099	913	3,714	1,638
March.....	3,018	5,684	6,090	6,539	4,834	6,132	936	4,521	1,137
April.....	2,227	3,427	4,993	3,669	5,100	3,949	609	619	917
May.....	1,750	2,934	3,182	5,743	4,029	3,973	663	471	1,229
June	2,250	3,119	3,181	3,662	2,476	2,949	287	353	1,555
July.....	2,268	2,343	3,181	3,779	2,055	3,388	603	435	1,453
August	2,042	3,000	3,181	4,243	2,848	3,576	754	530	1,716
September ..	3,091	4,133	4,897	4,890	4,570	3,881	1,044	691	867
October.....	4,859	6,260	6,378	6,277	6,963	5,134	1,663	871	1,063
November...	7,134	7,363	.....	7,551	7,363	.....	1,757	1,071	.....
December...	9,280	7,652	.....	6,304	6,627	.....	2,223	1,683	.....
Total.....	47,348	60,714	52,125	64,133	59,240	45,561	12,703	17,993	13,012

New Equipment Applied Locomotives and Cars.

During the year alterations have been made to cupboards in several of our baggage cars, and gunracks have been applied to express cars for the use of express messengers. The Safety Car Heating Company's standard heating system has been installed in combination car No. 10. Coach No. 30 has been equipped with the Parker Straight Steam Heating System.

Air Brake Equipment.

During the year the air brake equipment of 54 coaches, 257 60,000 lb. cars, 52 80,000 lb. cars, 57 100,000 lb. cars, and 25 miscellaneous equipment have been cleaned, repaired and tested as per M.C.B. rules.

Schedule L.N. Brake Equipment has been installed on the following passenger cars:—First class coaches Nos. 10, 101 and 109; second class coach No. 2; workmen's coaches Nos. 26 and 28, mail and express cars Nos. 1 and 23. New foundation break gear and high speed brake beams have been applied to these cars to

stand the extra strain of the high speed brake. We expect in the early part of 1914 to have all passenger trains equipped and operating the L.N. high speed brake, which is one of the most efficient brakes for passenger service.

Tenders of engines 108, 113, and 128 have been equipped with American Automatic Slack Adjusters. This will give uniform piston travel, which is one of the most essential requirements of good braking.

To facilitate switching in way-freight and work train service, engine No. 122 has been equipped with Schedule S.W.A. brake in addition to the automatic brake.

The schedule E.T. No. 6 brake has been installed on engine No. 107. All main line passenger engines are now equipped with this brake, which is the most efficient engine brake for steam road service.

On March 1st the air pressures used in brake service were raised to the following standards:—

Passenger Service.

Brake Pipe	90 lbs.
Main Reservoir	110 lbs.
Main Reservoir Maximum	125 lbs.

Freight Service.

Brake Pipe	70 lbs.
Main Reservoir	90 lbs.
Main Reservoir Maximum	125 lbs.

The above in connection with the E.T. and L.N. brakes now installed will give one of the best engine and train brakes now available for passenger service. The increasing of main reservoir pressure in freight service to facilitate the release of brakes on long freight trains was brought about by the introduction of the Consolidation Locomotives.

Engines Nos. 109 and 110 have been equipped with H-24 driver brake triples and H-1 tender triples, S-F-4 governors for duplex main reservoir control. These engines can now be used in high speed passenger service.

Engines Nos. 150 and 151 have been equipped with air signal and S.*F. governor, to facilitate the transferring of passenger trains from North Bay Junction to the C. P. R. station.

The air brake equipment of the Nipissing Central Railway has been cleaned, repaired and tested in accordance with Maintenance Regulations issued in December, 1912. The repairing and testing of the equipment is carried on at our North Bay Junction shops, where the facilities for doing this work are of the best. The six motor cars and combination baggage car in service on the Nipissing Central Railway are equipped with the Westinghouse A.M.M. brake, which is especially adapted for both city and high speed interurban train service.

The International Correspondence School Air Brake Instruction Car No. 103 arrived on the T. & N. O. Rly. July 23rd. and remained on the line for nine days. During this time the operation of the air brake was demonstrated to the employees engaged in the movement of trains.

A feed valve testing attachment has been added to the air brake testing rack. at North Bay Junction, and two nine and one-half inch compressors have been installed in the shop for compressing shop air to 125 lbs. This will enable us to test and adjust all feed valves, reducing valves and pump governors before being placed in service on the road.

The car "Sir James" has been equipped with supplementary reservoirs. This car can now be operated in trains equipped with the L.N. or P.C. High Speed Brake.

Summary of Extensive Repairs on Locomotives.

During the year the Motive Power Equipment has been properly maintained and repairs and renewals necessary from time to time have been executed thereon.

Extensive repairs performed on locomotives at North Bay Junction shop as follows:—

Engine No. 101, heavy repair during May, 1913.

Engine No. 102, heavy repair during February; was again in shop for heavy repair during August, when she had 75 new tubes applied.

Engine No. 103, heavy repair during June.

Engine No. 104, heavy repair during April, and again in shop for general repair during September.

Engine No. 105, had heavy repair and new boiler tubes applied in April, and was again turned out of shop in October after having received a general repair.

Engine No. 106, had heavy repair and 75 new boiler tubes applied during July.

Engine No. 107, heavy repair during May.

Engine No. 108, general repair during October.

Engine No. 109, heavy repair and new boiler tubes during October.

Engine No. 110, given light repair in April.

Engine No. 111, given heavy repair in August.

Engine No. 112, general repair in September.

Engine No. 113, light repair in January and heavy repair in July.

Engine No. 114, general repair in July.

Engine No. 115, general repair and new boiler tubes during December, 1912.

Engine No. 116, General repair and new boiler tubes during October, 1913.

Engine No. 117, General repair and new boiler tubes, also patch put on side f flue sheet in August.

Engine No. 119, General repair and new boiler tubes in July.

Engine No. 121, general repair and 30 new boiler tubes applied during Jaary and tires turned during March.

Engine No. 122, in shop for light repair during March.

Engine No. 125, in shop for light repair during May.

Engine No. 126, general repair and new boiler tubes during May.

Engine No. 127, general repair and new boiler tubes in January.

Engine No. 128, general repair and new boiler tubes in March.

Engine No. 130, light repair in April and again in August.

Engine No. 133, heavy repair during September.

Engine No. 134, heavy repair in December, 1912.

Engine No. 137, heavy repair in May.

Engine No. 140, tires turned in March.

Engine No. 150, heavy repair during May.

Engine No. 151, general repair and new boiler tubes applied during August, 1913.

Engine No. 152, heavy repair during April.

Engine No. 153, general repair and new boiler tubes applied during April.

NOTE: The term "General Repair," as used above, refers to cases where an engine has received a thorough overhauling and rebuilding. "Heavy Repair" refers to cases where an engine has been given such repairs as driving tires turned, driving boxes renewed, valves, piston rings, and side rod bushings renewed. "Light Repair" refers to cases where an engine has received minor repairs, such as renewals of side rod bushings, piston rings and valve rings.

Each engine has had the boiler washed out once every two weeks when in regular service. Staybolts in fire boxes have been regularly tested and renewals made when necessary. Nettings, ash pans, and dampers have been regularly examined at the end of each trip during the summer season, as a precaution against fire. During damp weather and at such times as the danger from this source is reduced to a minimum, the nettings, ash pans, and dampers have been examined twice a week.

Engine Dispatch.

Statement showing the number of engines dispatched from the different terminal and divisional points during the year:—

Station.	Number of Engines Dispatched.
North Bay Junction	6,203
Cobalt	320
Englehart	3,786
Elk Lake	248
Timmins	927
Cochrane	1,044
Total	12,528

The Motive Power has been generally assigned during the year as follows:—

Engine No. 101, work service.

Engine No. 102, work service.

Engine No. 103, work service.

Engine No. 104, work service.

Engine No. 105, work service.

Engine No. 106, freight service.

Engine No. 107, passenger service.
Engine No. 108, passenger service.
Engine No. 109, passenger and work service.
Engine No. 110, passenger service.
Engine No. 111, passenger service.
Engine No. 112, passenger service.
Engine No. 113, passenger service.
Engine No. 114, passenger service.
Engine No. 115, freight service.
Engine No. 116, freight service.
Engine No. 117, freight service.
Engine No. 118, freight service.
Engine No. 119, freight service.
Engine No. 120, switching service.
Engine No. 121, freight service.
Engine No. 122, freight service.
Engine No. 123, freight service.
Engine No. 124, freight service.
Engine No. 125, work service.
Engine No. 126, freight service.
Engine No. 127, passenger service.
Engine No. 128, freight service.
Engine No. 129, freight service.
Engine No. 130, work service.
Engine No. 131, freight and passenger service.
Engine No. 132, freight service.
Engine No. 133, passenger service.
Engine No. 134, passenger service.
Engine No. 135, passenger service.
Engine No. 136, passenger service.
Engine No. 137, freight service.
Engine No. 138, freight service.
Engine No. 139, freight service.
Engine No. 140, freight service.
Engine No. 150, switching service.
Engine No. 151, switching service.
Engine No. 152, switching service.
Engine No. 153, switching service.

Locomotive Mileage.

The following statement shows the mileage made by the locomotives belonging to this railway:—

Engine No.	Miles Run, 1913.	Total Mileage of Engines.
101	24,220	275,278
102	24,045	256,824
103	20,528	234,017
104	25,621	253,000
105	20,832	194,620
106	35,679	218,155
107	17,211	206,889
108	35,577	268,423
109	14,244	240,945
110	26,822	220,325
111	40,579	290,924
112	25,173	277,322
113	30,883	285,818
114	46,138	301,716
115	15,972	161,297
116	20,957	156,907
117	24,050	163,308
118	19,160	171,907
119	20,803	178,966
120	27,793	174,128
121	25,776	152,400
122	29,083	165,420
123	38,387	163,436
124	36,510	148,003
125	27,094	167,597
126	18,885	142,993
127	30,572	143,517
128	24,095	136,798
129	24,426	118,575
130	26,464	94,007
131	15,254	115,546
132	17,884	115,663
133	35,896	66,260
134	19,376	81,766
135	56,840	109,693
136	24,552	79,403
137	37,162	48,533
138	40,726	50,442
139	13,346	15,442
140	28,252	34,796
150	26,117	192,911
151	31,788	259,510
152	38,074	115,536
153	18,842	102,708
Total	1,201,688	7,351,724

Repairs to passenger equipment.

Extensive repairs have been made to passenger equipment at North Bay Junction shop, as follows:—

Coach No. 12, turned out of shop during November, 1912, after having been converted into a combination baggage and passenger car.

Coach No. 112, was given a general repair, interior and exterior repainted and varnished, and turned out of shop during November, 1912.

Coach No. 40, was given a general repair to woodwork, trucks overhauled and scraped and turned out in December, 1912. Interior and exterior of car also repainted and varnished.

M. & E. No. 23, was repainted and varnished inside and outside, trucks scraped and overhauled, and car turned out in December, 1912.

Bagg. No. 1, had necessary repairs to woodwork, trucks overhauled, was repainted and varnished, and turned out in January.

Coach No. 102, necessary repairs to woodwork, trucks given a general overhauling, exterior and interior of car repainted and varnished, turned out in February.

Coach No. 28, necessary repairs to woodwork, interior and exterior of coach repainted and varnished, trucks overhauled. Turned out in March.

Cafe Cars Tetapaga and Wasaksima, given minor repairs to interior of cars during the month of March.

Coach No. 10, rebuilt into combination first class and baggage car in April.

Coach No. 106.—Had general repairs, repainted and varnished both inside and outside, trucks given general overhauling and car turned out of shop in April.

Coach No. 26, this car was given a general repair, exterior and interior repainted and varnished, slat blinds replaced with roller blinds. Car turned out of shop in July.

M. & E. Car 5, general repairs and painting on both exterior and interior of car. Trucks given a general overhauling. Turned out in July.

Bagg. No. 9, general repair on body and trucks of car, exterior and interior of car repainted and varnished and car turned out of shop in August.

Coach No. 107, trucks given general overhauling, one new outside sill also new sheathing on one side of car (due to derailment on G.T.R.). Exterior and interior repainted and varnished and new blinds applied, and turned out in August.

Coach No. 104, given general repair to woodwork inside and outside. Trucks rebuilt, exterior and interior of car repainted and varnished. Turned out in August.

Exhibition Car, windows and doors repaired, two windows closed up. Trucks repaired, revarnished. Turned out in August.

M. & E. car 23, given a general repair, repainted and varnished, and turned out in October.

Officials' Cars.

Official car "Sir James" was taken into shop during the latter part of October, 1912, was given a general overhaul, repainted and varnished, and the Stone Electric Lighting System installed, necessitating alterations in the location of gas tanks, provision boxes, etc., to make room for the battery boxes. The trucks were also gone over thoroughly and a new set of springs applied. Car was turned out of shop in December, 1912.

The car "Temagami" was given a general repair to interior and exterior of car, was repainted and varnished, and the name changed to "Abitibi." She was also equipped with new carpets. Turned out of shop during July.

Coach Cleaning.

Statement showing the number of coaches cleaned at the different stations during the year:—

Station.	Number of Coaches Cleaned.
North Bay Junction	2,281
Englehart	5,310
Cochrane	3,047
Timmins	1,849
Total	12,487

Repairs to Conductors' Vans.

During the past year vans Nos. 53, 60, 68, 58, 62, 54, 65, 59, 57, and 67 have been overhauled and necessary repairs made and vans repainted.

Repairs to Freight and Work Equipment.

The following cars have been rebuilt at the North Bay Junction shop during the year:—

Numbers 60431, 60639, 60179, 60309, 60111, 60359, 60199, 60393, 60369, 60019, 60769, 60147, 60207, 60633, 60001, 60163.

New sills have been applied to 95 cars.

Ninety-three flat cars have been redecked.

New roofs have been applied to two cars.

Seven thousand four hundred and sixteen cars have been repaired for foreign roads and bills collectible covering the cost of repars have been rendered against the car owners, in accordance with the standard code of rules governing the conditions of repairs to freight cars, for the interchange of traffic, adopted by the Master Car Builders' Association. In addition to this, bill has been rendered monthly against the Grand Trunk Railway System, covering the cost of repairs to fifteen thousand two hundred and thirty-six cars, under the terms of the Grand Trunk Running Rights Agreement, an actual cost of labor and material plus 10 per cent.

Snow plough No. 3 was released from the shop on November 8th, 1912, after having a new front applied, trucks repaired, and general painting. Flangers Nos. 1 and 2 were also in shop during November, 1912, and were painted exterior and interior. Snow plow No. 2 was repainted in October, 1913. Snow plow No. 4 was taken into shop and had a new front put in, was repainted, and turned out in October, 1913. Necessary repairs have been made to the rest of the work equipment as required. The auxiliary cranes have been repainted and the balance of the auxiliary equipment has been maintained in good condition and ready for immediate service at all times.

Steel Tyres Turned and Wheels Applied to Rolling Stock.

During the year 54 pairs of driving tyres, 78 pairs of coach tyres, 47 pairs of tender wheels, 30 pairs of engine truck wheels, and 12 pairs of wheels for the Nipissing Central Electric cars have been turned on the wheel lathe at North Bay Junction.

The following tyres were bored out before being applied to wheels: 60 coach tyres, 28 tender tyres, 8 driving wheel tyres, 20 tyres applied to Nipissing Central cars.

At Englehart the wheel press, installed during 1912, has been doing good work, 1,106 wheels having been pressed off axles, new wheels bored and remounted on axles.

New wheels have been applied to T. & N. O. rolling stock as follows:—

To Locomotives.

2 pairs 30 in. C.I. wheels mounted on 3¾ x 7 in. axles.
6 pairs 33 in. C.I. wheels mounted on 3¾ x 7 in. axles.
6 pairs 33 in. C.I. wheels mounted on 4¼ x 8 in. axles.
54 pairs 33 in. C.I. wheels mounted on 5 x 9 in. axles.
6 — 57 in. driving tyres; 38 — 33 in. tender truck tyres; 6 — 28 in. engine truck tyres.

To Passenger Equipment.

4 pair steel tyred wheels, mounted on 4¼ x 8 in. axles.
60 — 36 in. steel tyres.
45 pairs wheels changed and tyres turned.

To freight Equipment.

5 pairs 33 in. C.I. wheels mounted on 3¾ x 7 in. axles.
168 pairs 33 in. C.I. wheels mounted on 4¼ x 8 in. axles.
26 pairs 33 in. C.I. wheels mounted on 5 x 9 in. axles.
41 pairs 33 in. C.I. wheels mounted on 5½ x 10 in. axles.

To Work Equipment.

4 pairs C.I. wheels mounted on 4¼ x 8 in. axles.
2 pairs C.I. wheels mounted on 5 x 9 in. axles.

In addition to the above, three pairs of cast iron wheels mounted on 5½ x 10 in. axles have been supplied to the G. T. P. contractors at Cochrane, and proper bill has been rendered to cover.

To Foreign Cars.

25 pairs 33 in. C.I. wheels mounted on 3¾ x 7 in. axles.
639 pairs 33 in. C.I. wheels mounted on 4¼ x 8 in. axles.
147 pairs 33 in. C.I. wheels mounted on 5 x 9 in. axles.
117 pairs 33 in. C.I. wheels mounted on 5½ x 10 in. axles.

Rolling Stock Destroyed.

C. P. R. car No. 58124 was destroyed by wreck at Englehart Junction, on the Charlton Branch, April 9th, 1913.

I. R. C. car No. 17598 was destroyed by fire at Earlton, June 30th, 1913.

C. P. R. car No. 70966 was also destroyed by fire at Earlton, June 30th, 1913.

All salvage in connection with above cars has been returned to the owners, and credit covering same has been allowed this railway on bills rendered by owners.

T. & N. O. car 60705 was destroyed by the D. & H. Ry. Co., at Parsons, on October 29th, 1913. Trucks were returned.

T. & N. O. car 69559 was destroyed by accident on the tracks of the P. R. R. at Philadelphia, Pa., June 19th, 1915. Trucks returned.

Bills have been rendered covering the depreciated value of above cars, less credit for salvage returned, in accordance with the rules of the Master Car Builders' Association.

T. & N. O. car 60207 was destroyed by wreck at Englehart Junction, April 9th, 1913. This car has been rebuilt and was returned to service October 13th, 1913.

T. & N. O. car 60639 was destroyed by wreck at North Bay Junction, January 11th, 1913. Car has been rebuilt and returned to service, March 19th, 1913.

Carpenter Shop.

The following miscellaneous articles have been manufactured and turned out of carpenter shop at North Bay Junction:—

9 station seats.
1 table for Bunk Room, Timmins.
600 brackets for bracing explosive shipments.
1 oak writing desk for Superintendent of Traffic.
1 cabinet for Mechanical Draughting Office.
1 cabinet for Paymaster's Office.
1 cabinet for office of Superintendent's Accountant.
3600 surveyors' stakes for Engineering Department.
62 transfer cases.
1 cable box for Telegraph Department.
234 crossing, station, snow plow and flanger, and mile post signs.
2 chairs repaired for yard office.
2 chairs repaired for Cobalt.
1 transit box made for Engineering Department.
1 levelling rod made for Engineering Department.
14 gang planks.
20 frames for notices, time cards, etc.
2 towel racks.
2 glass cutting boards.
1 barrel skid for Iroquois Falls.
1 sample box for shipping explosives.
1 conductor's kit box.
1 table for waiting room, New Liskeard station.
11 hand trucks repaired.
2 notice boards.
1 time table rack for Earlton station.
2 blackboards.
4 track levellings boards, for Road Department.

Pattern Making.

During the year there have been one hundred and thirty-three patterns made at the Pattern Shop at North Bay Junction, for the repairs and renewals to the different parts of the locomotives, freight and passenger cars, snow plows, shop machinery and other equipment. All patterns are the property of the railway, and a proper record is kept as to the location of the same.

The Motive Power Rolling Stock and Equipment of this railway at present consists of the following:—

40 road locomotives.
4 switching locomotives.

3 official cars.

14 first class coaches.

15 second class coaches.

2 combination second class and baggage cars.

1 exhibition car.

3 parlor cafe cars.

5 baggage and express cars.

5 mail and express cars.

23 conductors' vans.

10 stock cars.

147 box cars.

98 steel underframe flat cars.
367 wooden underframe flat cars.

12 steel drop bottom dump cars.

17 Hart convertible cars.

3 snow plows.

3 snow flangers.

3 right hand ballast plows.

3 left hand ballast plows.

3 centre ballast plows.

1 Jordon ballast spreader.

1 centre ballast spreader.

1 pile driver.

1 American railroad ditcher.

2 steam cranes.

3 steam shovels.

3 Lidgerwood rapid unloaders.

2 auxiliary boarding cars.

2 auxiliary tool cars.

2 road department tool cars.

2 crane cabin cars.

2 road cabin cars.

1 pile driver tank car.

6 boarding cars.

Farm of S. Greenwood, two miles from New Liskeard, 1913.

ANNUAL REPORT, ROAD DEPARTMENT TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION

Year Ended October 31st, 1913

WM. YOUNG, GENERAL ROADMASTER.

Maintenance of Track

First Division, North Bay to Englehart, Including Branches.

As expected, tie renewals increased 26.7 per cent. over the year 1912, but the estimates for 1914 indicate a marked decrease (54 per cent. estimated) from this year, on account of the original ties laid in the years 1903-04 having been largely renewed.

Rail renewals increased ten-fold over the year 1912, this being largely due to the failure of the Algoma Steel Co. to deliver quantity ordered in time for use last year. It is estimated that about the same quantity will be required for next year in order to keep the maintenance of the road abreast of requirements due to the expected increase of traffic.

Second Division, Englehart to Cochrane, Including Branches.

Tie renewals on this division have increased 79.5 per cent. over previous year, and according to estimates, a further increase of 11 per cent. is expected for the year 1914.

Rail renewals, with exception of a few broken ones, have been practically nil.

General.

The track has been maintained throughout the year in very good running condition, the equal if not better than other lines with similar curvature and climatic conditions. The quantity of labour supply has been much better than the previous year, but no improvement in regards to quality, it being a difficult problem to find section laborers to qualify for promotion to efficient section foremen.

New Steel Laid.

From M.P.	To M.P.	Miles.	Description.	Maker, etc.
35	38.02	3.02	A. S. C. E. 80lb	Algoma Steel Co.. Year 1913
50.22	52.90	2.68	do	do Year 1912
52.89	61.36	8.47	do	do Year 1913
91	99.16	8.16	do	do Year 1913
		22.33		

Old Steel Released.

35	38.02	3.02	A. S. C. E. 80lb	Cammell, Sheffield, England, Year 1903.
50.22	52.90	2.68	do	Cammell, Sheffield, England, Year 1903.
52.89	61.36	8.47	do	Cammell, Sheffield, England, Years 1903-4.
91	99.16	8.16	do	Cammell, Sheffield, England, Year 1904.
		22.33		

Received 3,264.5 gross tons new steel from Algoma Steel Company, Sault Ste. Marie, Ontario, during the year. Of this lot 410 tons were ordered for laying new entrance to Cochrane yard, the balance being for renewals, etc.

The better class of rail released from main line, as above, known as No. 1 class, was used for renewals at other points in main track, and the No. 2 class was used for new sidings, etc. In this way the main line receives the benefit of new rail.

Other Rail Removed from Track. Account, Failures and Wear.

Description and Remarks.	No. Rails.	Lin. feet.	Make.
Failures.			
Clean break—cause unknown	29	941	Algoma.
	44	1,449	Cammell.
	4	132	D. I. & S.
Flaw in web of rail	1	33	D. I. & S.
	4	132	Algoma.
	2	66	Cammell.
	6	198	Cammell.
Flaw in base of rail	1	33	D. I. & S.
	2	66	Algoma.
Flaw through base and web of rail	2	66	Cammell.
	1	33	Algoma.
Lack of expansion room and high temperature.....	1	33	Cammell.
	97	3,182	

Removed account of general wear, the chief causes being:

Split head	15%	
Crushed head	75%	
Miscellaneous	10%	
	100%.....	19,305
Total lineal feet		22,487
Total gross tonnage		267.7
Track miles		2.13

NOTE.—The rails used to replace the above were principally No. 1 class released rails from points where new steel was laid.

Cross Ties Used.

	First and second quality.	Culls.
Renewals, Main Line, First Division	85,199	
" " " Second Division	35,032	
" Main Line and sidings, joint terminals, North Bay	2,719	
Renewals, Sidings, First Division	2,105	1,922
" " Second Division	2,470	215
" Porcupine Branch	65	
" Second Main Track (Nipissing Central Service)	141	
" Private sidings (B.C.)	284	
" Ballast Pit Tracks	1,356	
Extras, Main Line, First Division	612	
" " " Second Division	380	
" Sidings, Second Division		62
" Main Line and sidings, Porcupine Branch	336	
" " " " Elk Lake Branch	148	
New Railway sidings and spur tracks, including Iroquois Falls Branch and sidings, joint section—Cochrane new entrance and Cochrane terminals	31,047	2,500
New private sidings and spurs	1,907	485
Supplied for construction of Elk Lake Branch	53,771	833
" to Canadian Northern Railway Co.	5,208	
" to Grand Trunk Railway, at their Powassan wreck in February		45
Destroyed by bush fires	1,090	40
Totals	223,870	6,102

Sets of Switch Ties Used.

	For No. 8 frog.	For No. 10 frog.
Renewals, T. & N. O. switches	51	2
" Private switches (B.C.)	3	
New private sidings	13	
New T. & N. O. sidings	51	8
Destroyed by fire at McCool on June 30th	8	
Total	126	10

Set ties for No. 8 frog calls for 502 lin. feet 7 in. x 9 in. timber.
Set ties for No. 10 frog calls for 717½ lin. feet 7 in. x 9 in. timber.

Sidings Laid and Extended, Etc.

Location.	Description.	Purpose.	Service.	Length.
				Feet.
North Bay.	New coal dump spur	Coal storage	T. & N. O.	391
	Extension old coal dump spur	" "	"	327
	Material yard siding	Material storage	"	2,070
	Extension stock yard siding at C. N. R. crossing	Stock	Joint	192
	Coach siding No. 2, extended	Coaches	"	92
	Extension main line, westward through yard to connect with new entrance to C. P. station	General	"	1,057
	Main line, Golf Street west, to connect with new track laid by C. P. R. west of Regina Street, providing new entrance to C. P.	"	"	992
	Extension of ice house siding	Freight	"	2,115
	Cross-over from main line to freight shed siding	"	"	172
	Extension shop ladder track	Engines	"	217
	" cinder pit track	"	"	265
	" " loading track	"	"	362
	Cross-over main line to ice house siding	Freight	"	172
Timagami	Temporary track to fill in rear of station	Ballast	T. & N. O.	600
Owaissa	New passing siding	General	"	3,166
Latchford	Extension siding for Canadian Pulp & Lumber Co.	Pulp	Private	465
Kerr Lake Branch	No. 1 spur for Nipissing Red. Co.	Mining	"	324
	No. 2 spur for Nipissing Red. Co.	"	"	147
Cobalt	Extension freight shed spur	Freight	T. & N. O.	242
M. P. 104	Northern Customs Concentrator Co. spur	Mining	Private	1,112
North Cobalt	Northern Lumber Co. switch-back spur off main siding	Lumber	"	325
M. P. 110¾	New York & Pennsylvania Pulp Co. spur.	Pulp	"	340
Haileybury.	Extension, Nipissing Central market spur	Freight	N. C. R.	1,750
New Liskeard.	Extension, Nipissing Central:—Main line, 1,425 feet; switch-back at Wye, 247 feet; cross-over at Y, 95 feet	Passenger	"	1,767
M. P. 120	McKnight & Jones' spur	Pulp	Private	375
Elk Lake Branch	Main Line, Montreal River to end of steel	General	T. & N. O.	31,550
" "	M. P. 12, Harris Tie & Timber Co.'s spur.	Lumber	Private	305
" "	M. P. 13¾, Murphy's spur	"	"	645
" "	M. P. 18¾, W. F. Good's spur	Pulp	"	371
" "	Beacon, passing siding	General	T. & N. O.	990
Elk Lake	Through siding	"	"	1,303
" "	Town and shed siding	Freight	"	665
" "	Tail of Wye	Turning	"	1,400
" "	Leg of Wye	"	"	765
M. P. 130¾	Wm. Potter's spur	Pulp	Private	249
M. P. 132	T. & N. O. spur siding	Freight	T. & N. O.	310
M. P. 133	Riordan Pulp Co.'s spur, extended	Pulp	Private	155
Englehart	Muck-loading spur	Landscape Dept.	T. & N. O.	651
	Van storage siding	Vans	"	648
	Turn-table lead No. 1	Engines	"	315
	Turn-table lead No. 2	"	"	230
Charlton	Extension, Long Lake Co.'s spur for Malkin & Ryan and J. D. Ryckman	Lumber	Private	796
Wabewawa.	Spur siding, extended	Pulp	T. & N. O.	91
M. P. 151	New through siding	General	"	4,001
M. P. 156¼	Quincy Adams Lumber Co.'s spur	Lumber	Private	668
M. P. 196.80	Temporary spur for use of B. & B. Dept. for bridge work there		T. & N. O.	420
M. P. 213	Extension, Homer shed spur	Freight	"	130
M. P. 217	T. & N. O. spur siding	"	"	283

Sidings Laid and Extended.—Continued.

Location.	Description.	Purpose.	Service.	Length.
				Feet.
Iroquois	Falls Branch:			
	Main Line (6.5 miles)	General	T. & N. O.	34,325
	Siding M. P., 3.6	"	"	1,200
	Freight shed spur	Freight	"	600
	Transfer siding	"	"	1,100
	Branch to Abitibi Pulp & Paper Co.'s mills	Pulp	Private	4,490
	Pulp Co.'s siding at mill	"	"	603
	Pulp Co.'s siding at mill	"	"	457
	Passing siding, at station	General	T. & N. O.	1,200
	Leg of Wye	Turning	"	1,139
Porcupine	Branch:			
M. P. 17¾	McInnes & Walsh's spur	Lumber	Private	320
South Porcupine	Freight shed siding (moved only)		T. & N. O.	942
	Stub siding (moved only)		"	1,160
Timmins	Northern Canada Supply Co.'s spur siding	Supplies	Private	498
M. P. 245½	New spur siding	Freight	T. & N. O.	383
	Total lineal feet track			114,395

114,395 lineal feet .....21.66 miles.

Sidings Shortened and Taken up.

Location.	Description.	Purpose.	Service.	Length.
				Feet.
North Bay.	Portion of old main line which lately formed leg of Wye—up	Turning	T. & N. O.	873
	Coach storage siding—shortened	Coaches	Joint	100
M. P. 64½	Temporary pit siding—taken up	Ballast	T. & N. O.	1,332
Timagami	Temporary extension to town siding—taken up	Filling	"	600
M. P. 74¾	Temporary pit track—taken up	Ballast	"	583
M. P. 93½	Booth's spur siding—taken out	Lumber	Private	663
Porcupine	Stub siding—taken up	Freight	T. & N. O.	788
South Porcupine	" " "	"	"	812
	Town siding—taken up	"	"	600
	Stub siding—taken up	"	"	520
	Total feet			6,871

6,871 feet ..... 1.3 miles.

Sidings under Construction at End of Year

Cochrane:

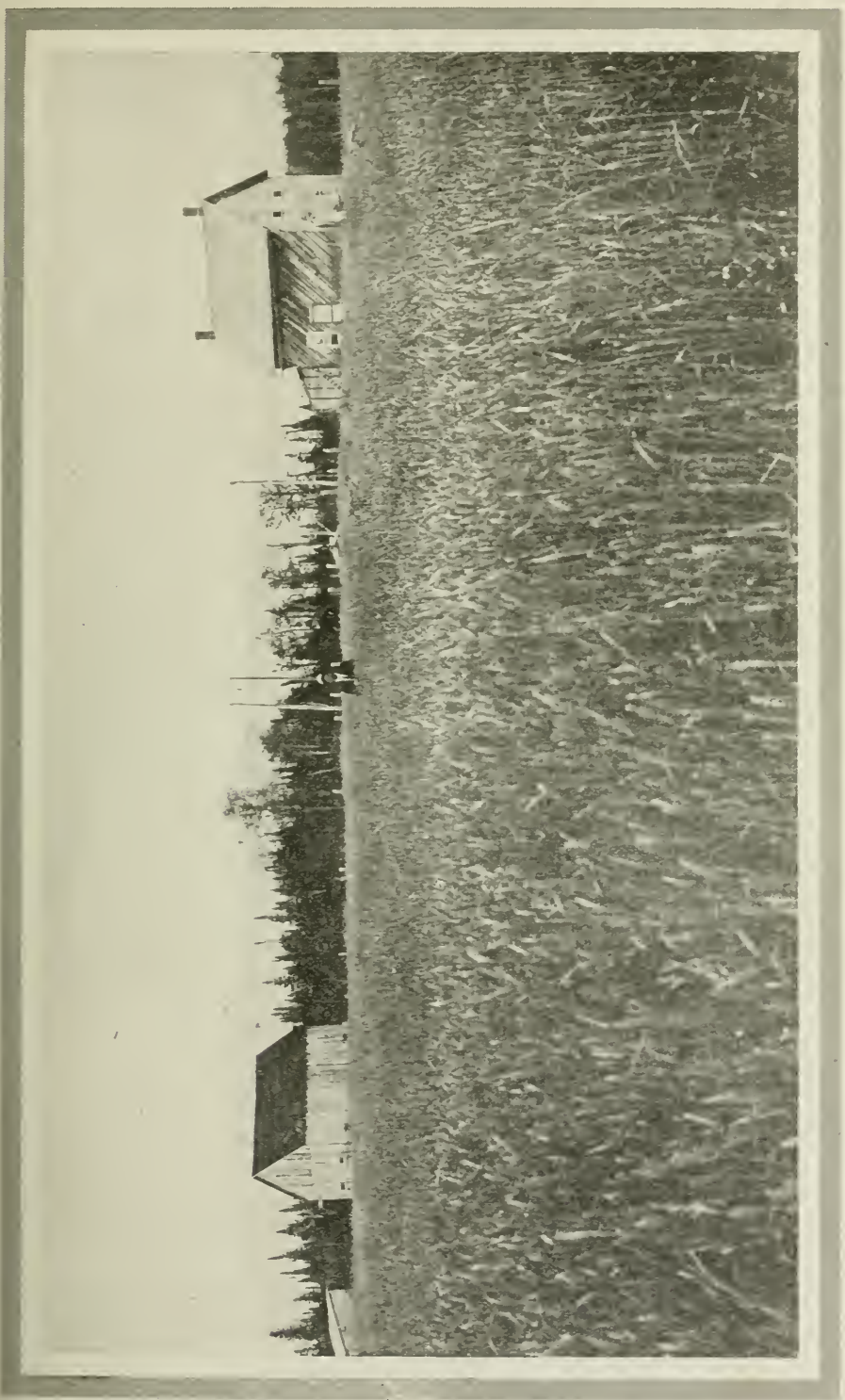
Main line of new entrance to Cochrane Terminals, approximately 9,600 feet laid and partly completed.

Terminal sidings in connection new entrance to Union Depot., approximately 2,700 feet of side tracks laid and partly completed.

It is expected both of the above works will be completed early in the spring of 1914.

New Under Culverts

Location.	Size.	Length.	Description.	Purpose.
North Bay..	24 inches	48 feet	Corrugated Iron Pipe	Under material siding at road crossing.
"	10 "	37 "	" " "	Under yard sidings, etc., new C.P. entrance.
"	15 "	208 "	" " "	"
"	20 "	24 "	" " "	"
"	24 "	48 "	" " "	"
"	30 "	24 "	" " "	"
M. P. 101½..	20 "	30 "	" " "	Under main line.
M. P. 104...	20 "	210 "	" " "	Under Northern Concentrator spur.
M. P. 110¾..	15 "	20 "	" " "	New York and Pennsylvania Pulp spur.
Elk Lake Br.				
M. P. 11.90.	15 "	20 "	" " "	Main Line.
M. P. 14.90.	24 "	30 "	" " "	"
M. P. 15.50.	12 "	30 "	" " "	"
M. P. 23.59.	2 ft. x 3 ft.	26 "	Cedar Box	"
M. P. 24.01.	2 " 2 "	28 "	"	"
M. P. 24.12.	3 " 3 "	28 "	"	"
M. P. 24.61.	3 " 2½ "	28 "	"	"
M. P. 24.80.	3 " 3 "	33 "	"	"
M. P. 25.55.	3 " 3 "	54 "	"	"
M. P. 25.71.	36 inches	35 "	Corrugated Iron Pipe	"
M. P. 26.00.	12 "	30 "	" " "	"
M. P. 26.41.	2 ft. x 2 ft.	42 "	Cedar Box	"
M. P. 26.69.	"	42 "	"	"
M. P. 27.28.	"	28 "	"	"
M. P. 27.57.	"	42 "	"	"
M. P. 27.73.	"	30 "	"	"
M. P. 28.08.	3 " 3	30 "	"	"
Elk Lake ...	2 " 2	30 "	"	Under Wye.
M. P. 132...	8 inches	20 "	Corrugated Iron Pipe	Under new spur.
"	24 "	20 "	" " "	" "
M. P. 156¼..	12 "	30 "	" " "	Quincy Adams spur.
M. P. 217...	20 "	16 "	" " "	New spur siding.
M. P. 245¼..	24 "	90 "	" " "	Main Line, at new spur.
Porcupine Branch				
M. P. 17¾...	20 "	20 "	" " "	McInnes & Walsh spur.



Farm of J. McFadden, Evanturel, 1913.

New Side Culverts.

Location.	Size.	Length.	Description.	Purpose.
North Bay..	14 inches	280 feet	Wooden Pipe.	Drainage material yard.
Feronia.....	24 "	30 "	Corrugated Iron Pipe.	Replacing wooden culvert at public road crossing.
Cobalt.....	10 "	30 "	" " "	Passenger landing, Nipissing Central.
"	10 "	32 "	" " "	Crossing, Hudson Bay Mines.
M. P. 103½..	10 "	80 "	" " "	Passenger landing, N. C.
Argentite...	20 "	48 "	" " "	Market street crossing.
" ..	24 "	36 "	" " "	" " "
M. P. 110 ..	12 "	20 "	" " "	Transfer siding crossing.
Road, Haileybury to New Liskeard ...	10 "	240 "	" " "	Pipe drainage, side ditches, Nipissing Central.
do	12 "	210 "	" " "	" " "
do	20 "	240 "	" " "	" " "
Elk Lake Branch :				
M. P. 0.70.	20 "	24 "	" " "	Farm crossing approaches.
" "	24 "	24 "	" " "	" " "
M. P. 1.20.	20 "	60 "	" " "	" " "
M. P. 2.10.	20 "	40 "	" " "	Public " "
M. P. 2.50.	24 "	40 "	" " "	Farm " "
M. P. 3.25.	36 "	24 "	" " "	Public " "
M. P. 3.40.	15 "	48 "	" " "	Farm " "
M. P. 3.60.	12 "	60 "	" " "	" " "
M. P. 5.10.	20 "	24 "	" " "	McCool siding entrance.
" "	24 "	20 "	" " "	Farm crossing approach.
M. P. 5.40.	36 "	24 "	" " "	Public " "
" "	30 "	24 "	" " "	Farm " "
M. P. 5.60.	30 "	20 "	" " "	" " "
M. P. 6.10.	36 "	20 "	" " "	" " "
" "	30 "	20 "	" " "	" " "
M. P. 6.40.	36 "	24 "	" " "	" " "
" "	30 "	24 "	" " "	Public " "
M. P. 6.60.	36 "	24 "	" " "	" " "
" "	30 "	24 "	" " "	Farm " "
M. P. 6.80.	36 "	24 "	" " "	" " "
" "	30 "	24 "	" " "	" " "
M. P. 8.50.	15 "	48 "	" " "	Public " "
M. P. 10.10.	12 "	48 "	" " "	Farm " "
M. P. 11.30.	36 "	24 "	" " "	" " "
" "	20 "	24 "	" " "	Public " "
M. P. 11.40.	12 "	48 "	" " "	Farm " "
M. P. 11.90.	12 "	40 "	" " "	" " "
M. P. 12.80.	15 "	40 "	" " "	" " "
M. P. 13.10.	15 "	20 "	" " "	Public " "
M. P. 13.20.	20 "	30 "	" " "	" " "
" "	30 "	30 "	" " "	" " "
M. P. 14.20.	20 "	60 "	" " "	" " "
M. P. 15.10.	24 "	30 "	" " "	" " "
" "	30 "	60 "	" " "	Farm " "
M. P. 15.24.	30 "	48 "	" " "	Under section tool house.
M. P. 15.50.	15 "	30 "	" " "	Crossing.
M. P. 17.80.	30 "	30 "	" " "	Public crossing approach.
" "	20 "	30 "	" " "	" " "
M. P. 25.30.	20 "	20 "	" " "	Mine road approach.
M. P. 26.40.	12 "	36 "	" " "	Farm crossing approach.
" "	15 "	18 "	" " "	" " "
Elk Lake ...	10 "	90 "	" " "	Front of section dwelling.
" ..	12 "	30 "	" " "	" " "

New Side Culverts.—Continued.

Location.	Size.	Length.	Description.	Purpose.
Elk Lake...	20 inches	60 feet	Corrugated Iron Pipe	Under station road.
Heaslip.....	10 "	150 "	" " "	Front of section dwelling.
Englehart ..	20 "	90 "	" " "	Railway Street, used by Landscape Dept.
" ..	8 "	18 "	" " "	Additional culverts, Station Street.
" ..	10 "	42 "	" " "	" " "
" ..	20 "	90 "	" " "	" " "
Wabewawa..	20 "	74 "	" " "	Extension spur siding.
M. P. 147½.	10 "	60 "	" " "	Side ditch, outlet for pond.
Sesikinika..	10 "	24 "	" " "	Station ground drainage.
M. P. 176½.	15 "	24 "	" " "	Public crossing approach.
Homer.....	20 "	72 "	" " "	Station grounds.
Nushka.....	24 "	90 "	" " "	" "
Iroquois Falls Branch:				
M. P. 6	30 "	36 "	" " "	Public crossing approach.

New Tile Drains.

Location.	Size.	Length.	Description.	Purpose.
M. P. 62..	6 inches	1,790 feet	Vitrified tile	Underdrainage cuts.
" 62..	8 "	30 "	Corrugated iron pipe..	" "
Timagami ..	6 "	130 "	Vitrified tile	Drainage restaurant.
M. P. 73.41	6 "	1,558 "	" "	Underdrainage cut.
" "	4 "	177 "	" "	" "
M. P. 74½	6 "	2,692 "	" "	" "
" 74½	8 "	60 "	Corrugated iron pipe..	" "
M. P. 96	6 "	650 "	Vitrified tile	" "
" "	8 "	30 "	Corrugated iron pipe..	" "
M. P. 101½	6 "	1,940 "	Vitrified tile	" "
" "	8 "	120 "	Corrugated iron pipe..	" "
" "	20 "	30 "	" " " ..	" "
Cobalt.....	6 "	150 "	Vitrified tile	Drainage roadway to fr... shed.
"	8 "	20 "	" " (uprights)	" "
Elk Lake...	6 "	430 "	" "	Underdrainage town siding.
Heaslip.....	6 "	340 "	" "	Drainage section dwelling.
Wabewawa.	6 "	3,320 "	Common land tile.	Underdrainage cutting.
M. P. 147½	6 "	662 "	" " "	" "
M. P. 147¾	6 "	3,009 "	" " "	" "
M. P. 148½	6 "	809 "	" " "	" "
M. P. 148¾	6 "	280 "	" " "	" "
Homer Sta'n	6 "	130 "	Vitrified tile.	" siding ext'n.
		18,357.....	Total Lineal Feet.	

18,357.....3.47 Miles.

Right of Way Cleaned.

Between M. P. and M. P.		Total Miles.	Remarks.
0	35	35	Brush and weeds mown from right of way. Previously cleaned.
41	42	1	Brush cut and piled. Stumps, logs and other rubbish not previously cleaned up by extra gangs.
46	49	3	Brush cut and piled. Stumps, logs, etc., not previously cleaned up by extra gangs.
51	101	50	Brush cut and piled. Stumps, etc., not previously cleaned up by extra gangs.
101	139	38	Brush and weeds mown. Previously cleaned of stumps, logs, etc., by extra gangs.
At Haileybury ...		1	All brush and logs and loose stumps piled and burned on right of way of Nipissing Central Railway.
At New Liskeard.	.....	.....	Nipissing Central right of way through town lots at this point cleaned of all brush, logs and stumps, same being piled up and burned.
139	143	4	Brush cut and piled. Stumps, etc., on this section not previously cleaned by extra gangs.
177	191	14	Brush cut and piled. Stumps, etc., not previously cleaned by gangs.
195	253	58	Brush cut and piled. Stumps, etc., not previously cleaned.
At Wataybeag Pit	.....	.....	Stumps, etc., piled up and burned.
At Porquis Junc..	.....	.....	Chopped timber on station grounds.
			Porcupine Branch.
0	25	25	Brush cut and piled. Stumps, logs, etc., not previously cleaned.
25	33	8	Brush and weeds mown. Previously cleaned of stumps, etc., by extra gangs.
Connaught.....		.....	Grounds of section dwelling cleaned of stumps, logs, etc.
Keys.....		.....	Grounds of section dwelling cleaned of stumps, logs, etc.
At sink hole, 23½..		.....	Sink hole cleaned of all loose rubbish, stumps, logs, etc.
			Elk Lake Branch.
0	28	28	Brush cut and piled. Stumps, etc., not previously cleaned.
At Earlton, Kenabeek, Osseo and Elk Lake.....		.....	Section dwelling grounds at these points and station grounds at Elk Lake cleaned of all brush, stumps, loose logs and other rubbish, same being piled and burned.
			Charlton Branch.
0	8	8	Brush cut and some logs and stumps piled and burned.
Total Miles....		273	

Roadway Improvements, etc.

Location.	Purpose.	Remarks.
North Bay ...	Town streets	Approaches to Golf Street crossing coated with 20 cars or approximately 200 cubic yards gravel from Pit M. P. 58½. This improved the street considerably. One car or about 50 yards cinders also used on this work.
" " ...	Freight shed roadways.	Driveways about the freight shed coated with two cars or about 100 yards cinders.
" " ...	Stock yard	Roadway graded and coated with cinders to provide access to stock yard.
Cobalt	Station driveways	Necessary ditching, etc., done here to put roadways to station and freight shed in good repair.

Roadway Improvements, etc.—Continued.

Location.	Purpose.	Remarks.
Haileybury ...	Station roads	Roadways at station and freight shed here coated with 16 cars, or about 160 yards gravel, hauled from Cassidy Pit, putting same in good condition.
" ...	Ferguson Ave.	Nipissing Central Railway track on this street raised with train load of ballast from Dane Pit (15 cars), and paved with 9 "Hart" cars with approximately 252 yards crushed rock from Cobalt mines. Planking laid on both sides of rails. This work is not yet completed.
Haileybury, N.	Public road	Graded and ditched roadway along Nipissing Central right of way.
New Liskeard.	Town streets	Nipissing Central street car tracks paved with plank and crushed rock from Cobalt mines. Seventy-five "Hart" car loads with approximately 2,100 yards of rock used for this work. Streets traversed by N. C. tracks through town of New Liskeard put in first-class shape.
" " .	Station road	Roadway repaired with cinders.
M. P. 115½ ...	Roadway to siding.....	Roadway graded and drained to provide access to siding from public road at this point.
McCool Siding.	Team road	Graded team road to siding at this point with 68 cars gravel from Elk Pit.
Wabun Siding.	" "	Graded team road to this siding with 45 cars gravel from Elk Pit.
Elk Lake	Town streets	Town of Elk Lake supplied with 22 cars or approximately 220 yards gravel hauled from Elk Pit, for town streets.
" "	Station roads	Graded and drained roadway to station and freight shed and town siding. Fifty cars or approximately 500 yards gravel hauled from Elk Pit for this work.
Englehart	Water service	Roadway to pump-house at river bank repaired with cinders.
"	Freight shed	Necessary repairs made to freight shed roadways by coating with cinders.
"	Station	Repaired streets and roadway adjacent to station with cinder coating and necessary ditching. Used 7 cars or approximately 350 yards cinders.
Wabewawa ...	Freight delivery	Roadway to extension of spur siding at this point graded with filling material from Dane Pit. Necessary drainage installed.
Swastika	Town siding	Roadway to town siding widened by removal of rock obstruction and filled with 120 cars or approximately 1,200 yards filling material from Dane Pit.
Sesikinika ...	Station roads	Roadway to station improved considerably by the use of 30 cars or approximately 300 yards filling material from Dane Pit. Necessary ditching done to insure proper drainage.
Wahtaybeag..	Station road	Roadway to new shelter station graded and coated with cinders.
Homer	" "	Roadway to freight shed at this point very much improved by grading, drainage and cinder coating.
M. P. 217.....	Freight, etc.	Roadway graded from public road to provide access to new spur siding installed at this point to accommodate settlers.
Nahma	Station road	Station roadway graded with 16 cars filling material from Nellie Lake Pit.
Cochrane	Town streets	Supplied Town of Cochrane with 32 cars or approximately 320 yards sand gravel from Nellie Lake Pit.
"	Station road	Roadway at old station repaired with cinders.
Three Nations.	" "	Roadway to shelter station at this point covered with cinders.

Public Road Crossings.

Location.	Description.	Remarks.
North Bay	At grade	Crossing installed over new material yard siding, at public road.
Argentite	" "	Crossing installed at Market Street.
M. P. 117¼	" "	Over main line. New.
Elk Lake Branch.		
M. P. 1.10	" "	Over main line, approaches filled to a grade of 1 ft. in 20 ft., and to a width of 21 ft. at grade.
M. P. 2.20	" "	" " " "
M. P. 3.25	" "	" " " "
M. P. 5.40	" "	" " " "
M. P. 6.60	" "	" " " "
M. P. 10.10	" "	" " " "
M. P. 11.40	" "	" " " "
M. P. 13.20	" "	" " " "
M. P. 14.20	" "	" " " "
M. P. 15.10	" "	" " " "
M. P. 17.80	" "	" " " "
M. P. 176½	" "	Over main line. Government Road.
M. P. 194½	" "	Over main line. New entrance to Ramore Station.
M. P. 203	" "	Over main line. New entrance to Belleek Station.
M. P. 212	" "	Over main line.
Iroquois Falls Branch.		
M. P. 6	" "	Over main line.

Private Road Crossings.

Location.	Description.	Remarks.
M. P. 116¾	At grade	Over main line. New.
Elk Lake Branch.		
M. P. 0.70	" "	Approaches filled to a grade of 1 ft. in 20 ft. and to width of 17 ft. at grade line.
M. P. 1.20	" "	" " " "
M. P. 2.10	" "	" " " "
M. P. 2.50	" "	" " " "
M. P. 3.40	" "	" " " "
M. P. 3.60	" "	" " " "
M. P. 5.10	" "	" " " "
M. P. 5.60	" "	" " " "
M. P. 6.10	" "	" " " "
M. P. 6.40	" "	" " " "
M. P. 6.80	" "	" " " "
M. P. 8.50	" "	" " " "
M. P. 8.80	" "	" " " "
M. P. 11.30	" "	" " " "
M. P. 11.90	" "	" " " "
M. P. 12.80	" "	" " " "
M. P. 13.10	" "	" " " "
M. P. 15.24	" "	" " " "
M. P. 25.30	" "	" " " "
M. P. 26.40	" "	" " " "
M. P. 28.20	" "	" " " "
Sesikinika	" "	Old crossing filled, etc.
M. P. 198	" "	New crossing over main line.
M. P. 207	" "	New crossing over main line.

Cattle Guards Installed.

Location.	Crossing Sets.	Kind.	Remarks.
Earlton	1	Wooden slat..	Single track. Replacing burned set.
Porcupine Branch.			
M. P. 24¼	1	" " ..	Single track, public crossing.
M. P. 26	1	" " ..	" " " "
M. P. 27¾	1	" " ..	" " " "
M. P. 31¼	1	" " ..	" " " "
M. P. 32¼	1	" " ..	" " " "

NOTE.—Public crossings installed on Elk Lake Branch have not as yet been equipped with cattle guards.

Ditching—Hand Work.

Location.	Length.	Remarks.
North Bay	600 feet ...	Open ditching, drainage new stores building.
M. P. 75	350 feet ...	Open ditching.
Cobalt	100 feet ...	Ditch opened in rear of freight shed, drainage station grounds.
"	1,000 feet ...	Cleaned outlet ditch from Cobalt Lake. This was blocked by tailings from concentrators in that vicinity.
Haileybury Spur	450 feet ...	Open ditching, Nipissing Central Railway.
M. P. 101½	110 feet ...	Open ditch, outlet road-bed underdrainage.
Mountain Chutes	5,600 feet ...	Ditches opened in clay cuttings, construction, Elk Lake Branch.
Beacon	2,400 feet ...	Ditches opened in clay cuts, construction, Elk Lake Branch.
Heaslip	800 feet ...	New ditch opened.
"	460 feet ...	Old ditch cleaned.
Wabewawa	520 feet ...	Open ditch, in connection with spur extension.
M. P. 149, "Swanson's"	3,830 feet ...	Ditch opened through " Swanson's " cut.
Between M. P. 150 & 168	63,360 feet ...	Approximately 12 miles ditches cleaned in connection with cleaning of cuts of rock and mud, etc.

Machine Work.

M. P. 54¼	800 feet ...	Ditch in side cutting cleaned by ditching machine. Material cast over bank on opposite side of track.
Between M. P. 59 & 61.	1,000 feet ...	Ditch in side cuts cleaned. Machine work, the material so lifted being cast over bank on opposite side of track.
M. P. 207	600 feet ...	Ditch in side cut cleaned. Machine work, same as above.
M. P. 4 to 9, Porcupine Branch	1,500 feet ...	Ditching in side cuts on this section of road cleaned in same way as those above mentioned.

NOTE.—All the " machine " work above mentioned was performed by the "American" Railroad Ditching Machine.

Clay Cuts Cleaned—Machine Work.

Location.	Miles Road.	Remarks.
M. P. 109 to 112	3	Necessary cleaning done in clay cuts; 237 car loads clay lifted.
M. P. 147 to 149	2	Necessary cleaning done; 108 car loads lifted.
M. P. 195 to 220	25	Clay cuts along this section of road cleaned where necessary; 922 car loads material lifted. Also did some work in side cuts, material being cast over bank on opposite side of track.
	30	.....Total miles road.

NOTE.—All the above work performed by "American" Railroad Ditching Machine.

Land Slides and Wash-Outs.

Location.	Remarks.
M. P. 102	Small wash-out at culvert. Filled with one car cinders.
Nipissing Central Line, Haileybury	Wash-out in road-bed along lake shore, due to high water. Filled with 85 cars ballast hauled from Elk Pit.
M. P. 109-110.....	Land slides. Lifted 49 cars clay with ditching machine.
M. P. 110-111	Land slides. Lifted 28 cars clay with ditching machine.
M. P. 111½	Land slides. Lifted 28 cars clay with ditching machine.
M. P. 149	Land slide in "Swanson's" cut. Slight interruption to traffic resulting.
M. P. 160½	Small rock slide occurred here on October 25th. Cleared without causing delay to traffic.
M. P. 173	Small wash-out at this point. Filled with cinders.
M. P. 203½	Small slide in clay cutting. Cleared by hand.
M. P. 241 and M. P. 244	High water during latter part of April caused somewhat serious wash-outs at these points. Filled with 20 cars ballast from Barber's Bay Pit and 7 cars round stone. Traffic interrupted for about three hours as a result.
South Porcupine, yard.	High water during latter part of April washed out road-bed, and on April 26th track in vicinity of South Porcupine station was completely submerged. Traffic was interrupted more or less for four days. Filled and damage repaired with 39 cars ballast from Barber's Bay Pit, 2 cars cinders from Cochrane and 35 cars round stone.

Fence Repaired and Renewed.

Description.	Location.	Side.	Total rods.
Right of way.....	Between M.P. 115 and 117, rebuilt..	West	605
" "	" M.P. 117 and 118, repaired	East	160
" "	Thornloe, rebuilt.....	Both	180
" "	M.P 126, rebuilt.....	West	160
" "	M.P. 126 and 129, repaired	East	813
" "	M.P. 127, rebuilt	West	202
" "	*Earlton, in rear of station, rebuilt ..	.....	240
" "	* " south from station, rebuilt .	West	330
" "	Between M.P. 141 and 143, repaired	Both	370
	Total rods	.....	3,060

3,060 rods.....9.56 miles fence.
*Destroyed by fire.

New Fence Constructed.

Description.	Location.	Side.	Gates.	Total rods.
Boundary or right of way, of page wire, with cedar posts ..	Tomiko, enclosing grounds of section dwelling	West	1	51
"	Jocko, enclosing grounds of section dwelling	West	1	33
"	Timagami, new	East .	1	501
"	From M.P. 101 south and around Cassidy pit to Bass Lake	West	3	880
"	Cobalt, east side Commission Street south from section dwelling			80
"	M.P. 110¾ at New York and Penn. Pulp Co.'s Spur			30
"	Nipissing Central Railway, right of way north of Haileybury, fencing roadway to residential property	East .		40
	M.P. 111½, around town lots, Nipissing central line	East .		80
"	Heaslip, at section dwelling	East .	1	22
"	From Porquis Junct., north (M.P. 225)	Both .	4	770
	Total rods			2,487

2,487 rods.....7.77 miles fence.

Timber Bridges, etc., Filled.

Location.	Material.	Quantities.	Remarks.
M.P. 55.36	Filling from pit at M.P. 58½	1,045 cars, approx. 10,450 yards.	Old pile trestle filled with coarse gravel and sand.
M.P. 68.71	Filling from 58½	1,656 cars.	
	Filling from Doherty	221 "	
	Filling from M.P. 78	75 "	
		1,952 "	"
M.P. 69.71	From M.P. 58½	487 "	
	From M.P. 78	98 "	
		585 "	"
M.P. 70.21	From M.P. 58½	188 "	
	From Doherty	16 "	
		204 "	"
M.P. 75.44	From cut M.P. 78	1,475 "	Old pile trestle filled with boulders and gravel.
M.P. 179..	From Dane Pit	475 "	Old pile trestle cross-logged and filled with sand and gravel.
M.P. 17.7 Porcupine Branch..	From Barber's Bay	147 cars gravel.	Trestle approach to permanent
M.P. 3 Porcupine Branch..	From Barber's Bay	16 cars stone.	bridge filled with coarse gravel.
M.P. 5 Porcupine Branch .	From Nellie Lake	79 cars.	Re-filling trestle previously filled.
M.P. 10 Elk Lake Branch .	From Nellie Lake	48 cars.	Re-filling trestle previously filled.
Montreal River...	From Elk Pit	17 cars.	Sand filling, fire protection.
Elk Lake Branch .	From Elk Pit	2,500 cars sand, etc.	Temporary trestle approaches on both ends of permanent
M.P. 27 Elk Lake Branch .		5 cars cinders	bridge filled with sand and gravel, etc.
	From Elk Pit	72 cars.	Partly filled temporary trestle to hold pile bents. To be filled during year 1914.

Main Line, Re-ballasted.

From M.P.	To M.P.	Quantities and Description.	Cars.	From pit.	Total miles.
*47	*56	One car deep			9
56	59	Patch work	610	M.P. 58½	3
110.5	111.5	" "	8	Cassidy	1
118.5	119.5	" "	16	"	1
121.5	122.5	" "	25	"	1
132	135	One car deep	396	Elk Pit	3
139	140	Patching	13	"	1
146	149	"			3
149	164	Full, one car deep	1,978	Dane	15
164	165	Patching			1
220	221.5	Full, one car deep	147	Nellie Lake.	1.5
247	248	Patching	13	"	1
		Elk Lake Branch.			
10	23	Full, one car deep	5,304	Elk Pit	18.5
23	28.5	Full, approx. 2½ cars deep			
		Total miles			59.0

Total miles full ballasted..... 47
" patch " 12

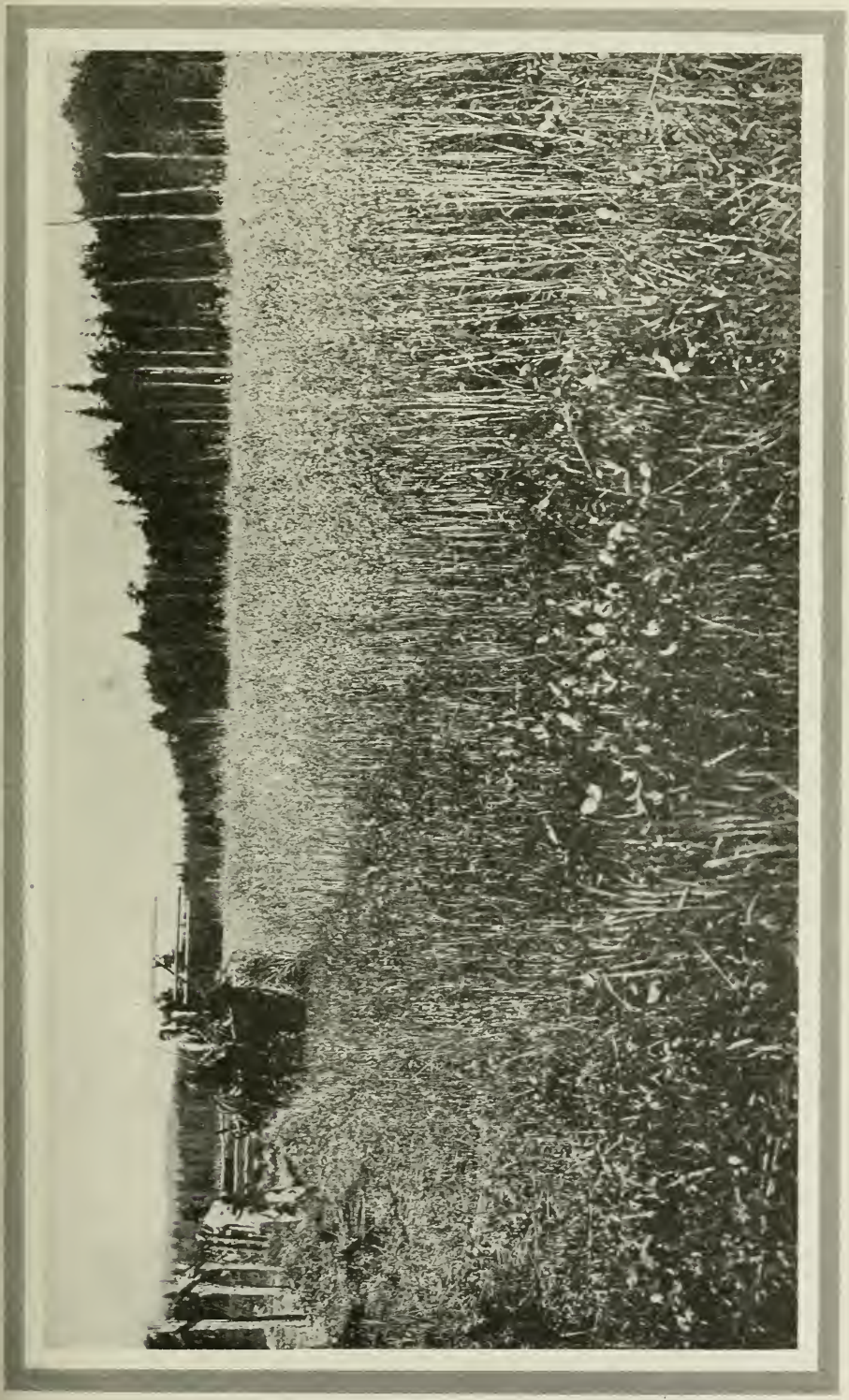
Total miles ballasted..... 59

NOTE.—The work on Elk Lake Branch as shown above was done on Construction Account.
*Completing work done in 1912.

Main Line Embankments Restored to Width.

Between— M.P.	and M.P.	Cars of ballast, etc.	From ballast pits, etc.	Total miles.
4.75	5.00	15–sand	Feronia	0.25
6.00	6.25	15–sand	Feronia	0.25
23	23.50	45–sand	Feronia	0.50
71	78	77–filling	Cut at M. P. 78	7.00
80	89	68–filling	Cut at M. P. 78	9.00
		128–filling	Cassidy	
		10–filling	M. P. 58½	
98.5	99	32–filling	Cassidy	0.50
109	110	67–clay	Cuts M. P. 109–110	1.00
110	112	170–clay	Cuts M. P. 110–112	2.00
		Charlton Branch.		
0	7	254–filling	Elk Pit	7.00
144	169	2,666–sand	Dane Pit	25.00
		33–filling	Elk Pit	
		108–clay	Cuts M. P. 147–149	
194.5	195.5	99–clay	Cuts M. P. 194–195	1.00
200	200.25	8–sand	Nellie Lake	0.25
202.5	203.5	33–clay	Cuts M. P. 202–203	1.00
209	210	81–clay	Cuts M. P. 209–210	1.00
211	214	clay	Cast work, ditcher, cuts M.P. 211–214	3.00
215	223	709–clay	Cuts M. P. 215–220	8.00
		32–sand	Nellie Lake Pit	
233	234	16–sand	Nellie Lake Pit	1.00
244	245	16–sand	Nellie Lake Pit	1.00
		Porcupine Branch.		
4	8	33–clay	Cuts M. P. 4–8	4.00
			Total miles	72.75

NOTE:—Embankments were repaired where necessary between mile posts as shown above. Clay material shown was taken from cuts by "American" railroad ditching machine and dumped no nearby embankments.



Farm of H. Hackford, Chamberlain, 1913.

Track—Re-Surfaced.

Between—		Main Line.		Sidings.		
M.P. &	M.P.	Average Lift.	Total Miles.	Average Lift.	Miles	Location.
		inches.		inches.		
18	30.25	4	12.25	4	0.30	Tomiko siding.
63	72	6	9.00	.....	.....	
76	77	4	0.50	.....	.....	
94	95	3	0.30	.....	.....	
.....	.....	.....	.....	6	0.6	Bass Lake siding.
.....	.....	.....	.....	7	0.04	McChesney's spur, M.P. 114.
.....	.....	.....	.....	3	0.12	Sidings. Uno Park.
119	121	3	1.37	.....	.....	
120	136.5	5	16.50	4	0.25	Siding, Heaslip.
.....	.....	.....	.....	6	1.10	Yard tracks, Englehart.
145	146	3	0.50	.....	.....	
149	166.5	7	17.50	.....	.....	
220	223	6	1.80	.....	.....	
.....	.....	.....	.....	20	2.00	Sidings, Cochrane.
			Porcupine Branch.			
14	16	5	1.00	.....	.....	
			Elk Lake Branch.			
5	21	6	16.00	6	0.60	Kenabeek, Osseo and Mount. Chutes sidings.
21	28.5	14	7.50	14	1.25	Wabun, Beacon and Elk Lake sidings.
		5.5	84.22	7.7	5.72	

NOTE—The Work as shown above on Porcupine and Elk Lake Branches was done on Construction Account, also that on sidings at Cochrane.

Main Track Re-Aligned and Curves Spiralled.

From M.P.	To M.P.	Average distance moved.	Total Miles.
24	30.5	5 in.	6.5
63	72	9 in.	9.0
91	99	7 in.	8.0
132	136	8 in.	4.0
149	168	6 in.	19.0
		7 in.	46.5

Rock Cuts Cleaned and Widened.

Between M. P. and M. P.		Total Miles.	Remarks.
150	155	5	All loose rock and mud removed from cuts.
163	169	6	All loose rock and mud removed.
		11	Total miles.

Retaining Walls.

Location.	Description, etc.
M. P. 62	Rebuilt 50 lineal feet of dry stone wall in cutting.
Cobalt	Completed the construction of dry stone retaining wall along station grounds boundary line, with dimensions as follows: Length ..... 195 feet. Average height ..... 8 feet. Average width ..... 2½ feet.

Rip-Rapping Embankments.

Location.	General Description.
M. P. 84	20 car loads stone used to protect embankment.
M. P. 89	40 car loads stone placed here to protect embankment which partly slipped into Johnston Lake.
Haileybury	Used 84 car loads stone along shore of Lake Temiskaming to protect roadbed of Nipissing Central Street Railway.
M. P. 17.7, Porcupine Branch	Used 16 car loads stone for protection of concrete abutments at Porcupine River Bridge.
M. P. 28, Porcupine Branch	35 car loads stone placed along embankment where roadbed was washed out by the high water during month of April.

Ballast, Loaded by Steam Shovel, Feronia Pit.

Cars.	Purpose.
671	Filling for and ballasting new tracks in connection with entrance to Canadian Pacific station, North Bay.
45	Ballasting material storage yard siding, North Bay.
15	Ballasting for extension sidings at point of crossing of Canadian Northern Railway, just north of North Bay yard.
15	Widening main line embankments, M. P. 4¾.
15	Widening main line embankments, M. P. 6.
45	Widening main line embankments, M. P. 23, 23½.

806 Flat cars.

Ballast, Loaded by Steam Shovel, Pit M. P. 58½.

Cars.	Purpose.
610	Ballasting main line, First Division. Maintenance.
64	Construction ballasting Nipissing Junction Spur, east of North Bay Terminals.
16	Ballasting Nipissing Central Railway connection, North Cobalt.
1,005	Filling bridge, M. P. 55.36.
1,656	Filling bridge, M. P. 68.71.
487	Filling bridge, M. P. 69.71.
188	Filling bridge, M. P. 70.21.
4,026 Flat cars.	

Ballast, Loaded by Ditcher, Pit M. P. 58½.

Cars.	Purpose.
10	Filling narrow embankments, M. P. 89.
20	Improvements to street crossing, freight shed spur, Golf Street, North Bay.
40	Filling bridge, M. P. 55.36.
7	Loaded for B. & B. Dept., for concrete work on new water tank at Widdifield.
3 Harts	Loaded for B. & B. Dept., for concrete work on new water tank at Widdifield.
80 Cars.	

Ballast, Loaded by Steam Shovel, Doherty.

Cars.	Purpose.
16	Filling bridge, M. P. 70.21.
221	Filling bridge, M. P. 68.71.
412	Filling hole in rear of station, Timagami (Townsite Account).
649 Flat Cars.	

**Filling Material, Loaded by Steam Shovel, Cut M. P. 78.*

Cars.	Purpose.
787	Filling for new passing siding, Owaissa (M. P. 78).
1,475	Filling bridge, M. P. 75.44.
75	Filling bridge, M. P. 68.71.
98	Filling bridge, M. P. 69.71.
77	Widening embankments, M. P. 71 to 78.
68	Repairs to washouts between M. P. 80 and 84½.
271	Filling hole in rear of Timagami station (Townsite Account).
2,851 Cars.	

*This material was excavated through cut at M. P. 78 in the work of grading for new through siding at that point (Owaissa). Some of this material was taken out to lower grade of main line at that point to correspond with level of new siding.

Ballast, Loaded by Steam Shovel, Cassidy.

Cars.	Purpose.
32	Ballasting Nipissing Central Railway.
16	Ballasting Nipissing Central Railway Connection, North Cobalt.
24	Ballasting Main Line, First Division.
160	Widening main line embankments, First Division.
8	Ballasting New York and Pennsylvania Pulp Co.'s spur, M. P. 110¾.
16	Ballasting Northern Lumber Company's spur siding, North Cobalt.
16	Filling station roadways, etc., Haileybury.
135	Ballasting new through siding, Owaissa.
15	Filling for new station platform, Earlton.
25	Ballasting main line, M. P. 122.
30	Filling for new road crossing, Argentite.
477 Cars.	

Ballast, Loaded by Ditcher, Cassidy.

Cars.	Purpose.
78	Repairs to Bass Lake siding.
18	Ballasting extension siding at Latchford for Canadian Pulp and Lumber Company.
70	(Loam) Filling station grounds, Latchford.
3 Harts.	Covering underdrainage, M. P. 74.
169 Cars.	

Ballast, Loaded by Hand, Cassidy.

Cars.	Purpose.
13	Filling Nipissing Central Railway Connection, North Cobalt.

Ballast, Loaded by Steam Shovel, Elk Pit.

Cars.	Purpose.
2,500	Filling approaches to bridge, Montreal River, Elk Lake Branch.
5,629	Ballasting Elk Lake Branch, from M. P. 10 west to end, including Elk Lake Terminal sidings.
23	Ballasting Beacon passing siding.
183	Ballasting Wabun passing siding.
45	Filling for team roadway, Wabun siding.
149	Filling over culverts, Elk Lake Branch.
66	Ballasting Mountain Chutes siding.
68	Filling for team roadway, McCool siding.
50	Filing station grounds, Elk Lake.
21	Ballasting Murphy's spur siding, M. P. 13¾.
3	Widening in Elk Pit.
17	Filling bridge, M. P. 10, Elk Lake Branch.
37	Filling bridge and dump, M. P. 26, E. L. B.
35	Filling bridge, M. P. 27, E. L. B.
	NOTE.—All of the above used for construction of Elk Lake Branch.
17	Ballasting extension, market spur, Haileybury.
5	Ballasting extension, Nipissing Central, New Liskeard.
85	Filling wash-out on Nipissing Central, Haileybury.
8	Supplied Messrs. Routley & Summers, North Cobalt, for concrete work. B/C.
22	Supplied Town of Elk Lake for town streets, etc. B/C.
7	(2 Harts) Ballasting Canadian Pulp & Lumber Co.'s spur, Latchford.
17	Filling over culvert, M. P. 162¾, where fire burned out cinder filling.
188	Ballasting Englehart yard tracks.
13	Ballasting Main Line, Second Division.
396	Ballasting between M. P. 132 and 135.
66	Ballasting extension of Long Lake Co.'s spur, Charlton, for Malkin & Ryan and J. D. Ryckman & Sons.
105	Filling under coal chutes, Englehart.
254	Widening embankments, Charlton Branch, including Dack siding and at Charlton yard.
17	Filling bridge approaches, M. P. 1¾, Charlton Branch.
33	Widening main line embankments, M. P. 145 to 146.
10,059 Cars.	

**Filling Material, Loaded by Steam Shovel. Cut, M. P. 151.*

Cars.	Purpose.
780	Filling for new passing siding, M. P. 151 (Minaki).
10	Filling for station landing, Kenogami shelter station.
790 Cars.	

*Material was excavated through cut at this point to make grade for new passing siding.

Ballast, Loaded by Steam Shovel, Dane Pit.

Cars.	Purpose.
429	Filling and ballasting new through siding, M. P. 151 (Minaki).
1,978	Ballasting main line between M. P. 146 and 165.
2,666	Widening main line embankments between M.P. 144 and 169.
475	Filling bridge, M. P. 179.
45	Ballasting extension to Wabewawa spur and filling roadway thereto.
120	Widening roadway to town siding, Swastika.
30	Station roadway improvements, Sesikinika.
15	Filling Government Road crossing, north of M. P. 176.
5	Ballasting Lucky Cross Mine spur, Swastika. B/C.
20	Ballasting through siding, Heaslip.
90	Ballasting extension to market spur, Haileybury. N. C. Railway.
15	Ballasting Ferguson Avenue, Haileybury. N. C. Improvements.
30	Ballasting Concentrator Co.'s spur, M. P. 104.
15	Underdrainage, M. P. 148.
5,933 Flat Cars.	

Filling Material, Loaded by Ditcher, Barber's Bay.

Cars.	Purpose.
39	Repairs to wash-outs in vicinity of South Porcupine during April.
3	Supplied Dome Mines Co., South Porcupine. B/C.
20	Repairs, wash-outs, M. P. 241-244, in April.
2 (stone)	Repairs, wash-outs, M. P. 241-244, in April.
64 Cars.	

Ballast, Loaded by Hand, Barber's Bay.

Cars.	Purpose.
147	Filling approaches to Porcupine River Bridge, M. P. 17.7, Porcupine Branch.
4	Ballasting McInnes & Walsh's spur siding, Porcupine River.
2	Filling at M. P. 9¾, Porcupine Branch.
12	Supplied Dome Mines Co., South Porcupine. B/C.
165 Cars.	

Ballast, Loaded by Steam Shovel, Nellie Lake.

Cars.	Purpose.
30	Ballasting new freight shed sidings, South Porcupine. (These sidings moved only.)
40	Filling and ballasting temporary spur at bridge, M. P. 196.80 (Wild Goose River) for use of B & B. Dept. in connection with bridge improvements there.
3,601	Ballasting Iroquois Falls Branch and sidings, Construction.
594	Ballasting Abitibi Pulp & Paper Co.'s spur line and spurs at their mill, Iroquois Falls, Construction.
8	Filling road crossing, Iroquois Falls Branch.
14	Filling station grounds, Porquis Junction.
112	Filling approaches to Monteith River bridge.
8	Widening embankments, M. P. 200.
32	Widening embankments, M. P. 218 to 223.
16	Widening embankments, M. P. 233 to 234.
16	Widening embankments, M. P. 244 to 245.
147	Ballasting main line, M. P. 220 to 222.
13	Ballasting main line, M. P. 247 to 248.
48	Ballasting new spur siding, M. P. 245½.
16	Filling roadway to station, Nahma.
76	Supplied to Abitibi Pulp & Paper Co., Iroquois Falls. B/C.
79	Filling sag on filled trestle, M. P. 3, Porcupine Branch.
48	Filling sag on filled trestle, M. P. 5, Porcupine Branch.
877	Construction ballasting Joint Section, New Entrance to Cochrane station.
974	Construction, filling for Cochrane Terminals, New Entrance.
496	Construction, filling for new station platform, Cochrane.
132	Construction, filling under coal chutes, Cochrane.
32	Supplied Town of Cochrane. B/C.
7,409 Cars.	

Cinder Ballast.

North Bay.

Cars.	Where Unloaded.	Purpose.
3	North Bay	Ballasting stock yard siding.
2	" "	Ballasting ext. coach siding.
2	" "	Ballasting material yard siding.
27	" "	Cinder coating, piling ground, material yard.
1	" "	Coating crossing public road, material yard siding.
61	" "	Ballasting yard sidings, Joint Terminals.
55	" "	Paving extension coal dump.
2	" "	Repairs freight shed driveways, Regina Street.
1	" "	Repairs Golf Street crossing approach.
1	Section No. 1	Used at shim boxes.
2	North Cobalt	Supplied for car barns, Nipissing Central, North Cobalt.
2	Cobalt	Station grounds drainage and road improvements.
2	Earlton	Temporary platform, Earlton station.
2	Latchford	South approach, Montreal River Bridge.
6	Siding, M. P. 26	Ballast repairs to siding.
8	M. P. 45½	Filling sink hole.
1	M. P. 92¼	Ballast.
2	M. P. 9¼	Filling sink hole.
5	M. P. 62	Tile underdrainage of road-bed.
11	M. P. 73½	Tile underdrainage of road-bed.
9	M. P. 74	Tile underdrainage of road-bed.
1	M. P. 96	Tile underdrainage of road-bed.
9	M. P. 101¼	Tile underdrainage of road-bed.
215 Cars		

Redwater.

5	M. P. 74	Tile underdrainage of road-bed.

Cassidy Pit.

3	M. P. 62	Tile underdrainage of road-bed.
3	M. P. 74	Tile underdrainage of road-bed.
6 Cars		

Kerr Lake Junction.

2	Kerr Lake Branch	Ballast.
1	M. P. 4⅛	Approach to bridge, Kerr Lake Branch.
5	M. P. 0.5	Ballasting Nipissing Reduction Company's new spur sidings, Kerr Lake Branch.
1	M. P. 102	Filling small washout.
3	North Cobalt	Repairs to Nipissing Central Railway.
12 Cars		

Elk Pit.

Cars.	Where Unloaded.	Purpose.
5	M. P. 22	Bridge approaches, Montreal River, Elk Lake Branch.
6	M. P. 147-148	Tile underdrainage of roadbed.
5	North Cobalt	Repairs Nipissing Central Railway.
16 Cars		
5 T.R.		

Englehart.

1	Englehart.....	Freight shed driveways.
2	"	Bunk room grounds.
7	"	Repairs streets and roadways near station.
2	"	Repairs turntable pit.
13	"	Ballasting new van storage siding.
5	"	Ballasting new turntable sidings.
1	"	Repairs road to pumphouse.
1	"	Ballasting sidings.
1	New Liskeard	Station grounds.
1	New Liskeard	Supplied Lady Minto Hospital.
7	M. P. 132.....	Ballasting new spur siding.
2	M. P. 131.....	Ballasting Wm. Potter's spur siding.
2	M. P. 133.....	Ballasting extension Riordan Pulp Co.'s spur siding.
1	Cobalt.....	Ballasting extension to freight shed spur.
2	Cobalt.....	Crossings, Nipissing Central.
1	Cobalt.....	Platform landings Nipissing Central.
2	North Cobalt	Supplied for new car barns, Nipissing Central Ry.
39	North Cobalt and M. P. 110	Repairs to Nipissing Central Railway.
2	North Cobalt	Platform, Nipissing Central.
2	M. P. 111-112	Crossing improvements.
2	Earlton	Temporary platform at station.
1	Kenogami	Station platform landing.
1	Dack	Road crossing.
7	Charlton	Ballast.
42	M. P. 162¾	Supplied B. & B. Dept. for filling over new culvert.
8	M. P. 156¼	Ballasting Quincy Adams Lumber Co.'s spur.
1	M. P. 173	Repairs to wash-out.
2	Charlton Branch ..	Repairs to wash-out.
3	Dack	Station platform.
1	Heaslip	Drainage station grounds.
24	M. P. 142¾	Tile underdrainage of road-bed.
4	M. P. 147½	Tile underdrainage of road-bed.
7	M. P. 147¾	Tile underdrainage of road-bed.
1	M. P. 148½	Tile underdrainage of road-bed.
198 Cars		

Cochrane.

2	Cochrane	Coach siding.
4	"	Coal chutes approach.
1	"	Water tank.
3	"	Banking ice house.
4	"	Ballast.
1	"	Old station grounds.
2	"	Filling around bunkroom.
2	Nahma	Section house grounds.
2	South Porcupine ...	Filling wash-outs.
2	Nushka	Station grounds.
1	M. P. 213	Station roadway.
1	Wataybeag	Station roadway.
25 Cars		

Timmins.

Cars.	Where Unloaded.	Purpose.
2	.....	Bridge approach, Porcupine Branch.
1	M. P. 29	Ballast.
4	Timmins	Ballast yard sidings.
1	Three Nations	Station roadway.
8 Cars		

Other Materials Handled by Work Trains.

Cars.		Material.	Purpose.
Loaded.	Unloaded.		
101	.....	Coal	Locomotive fuel, North Bay.
16	16	Stone	Bridge approaches, Porcupine River Bridge.
84	84	"	Rip-rapping along lake shore, Nipissing Central Railway, north of Haileybury.
12	12	"	Stoning culvert ends, Iroquois Falls Branch and Pulp Co.'s spur line.
.....	11	Gravel	B. & B. concrete work, bridge M. P. 153½.
1	1	Concrete mixers ...	B. & B. concrete work, bridge M. P. 153½.
5	5	Cinders	Montreal River bridge, Elk Lake Branch.
7	.....	Rails and sw. matl..	Construction, Timmins Terminal sidings.
.....	3	Rails	New through siding, Minaki.
.....	26	"	Tracklaying, Elk Lake Branch, Construction.
.....	73	"	Rail renewals. First Division.
.....	1	"	New through siding, Owaissa.
.....	3	"	Construction, Cochrane Terminals.
.....	2	Rails and sw. matl..	Nipissing Reduction Co.'s spurs, Elk Lake Branch.
2	23	Rails	Tracklaying, Iroquois Falls Branch Construction.
2	4	"	Abitibi Pulp & Paper Co.'s spur line and sidings, Iroquois Falls Branch.
3	19	"	Tracklaying, etc., Joint Section, New Entrance to Cochrane station.
.....	6	Switch material ...	Tracklaying, Iroquois Falls Branch.
.....	2	Switch material ...	New through siding, Owaissa.
1	6	Timber and material	Construction culverts, Elk Lake Branch.
.....	2	Lumber, etc.	Station buildings, Elk Lake Branch.
3	.....	Poles	Cleaning right-of-way, First Division.
1	.....	"	Telegraph repairs.
.....	1	Ties	New through siding, Owaissa.
.....	55	"	Tracklaying, Elk Lake Branch.
.....	112	"	Tie renewals.
.....	2	"	New through siding, Owaissa.
.....	2	"	Dane pit work.
1	.....	" (old).....	New Entrance to C. P. station, North Bay.
27	58	"	Tracklaying, Iroquois Falls Branch.
18	10	"	Tracklaying, Joint Section, Cochrane.
8	6	"	Construction, Cochrane Terminals.
7	12	"	Abitibi Pulp & Paper Co.'s spur line and sidings, Iroquois Falls Branch.
.....	1	Ties (switch)	Construction sidings. Elk Lake Branch.
1	.....	Tools and equipment	Construction plant, etc.
94	94	Snow and ice	Snow expenses, North Bay Terminals.
24	24	Snow and ice	Snow expenses, Iroquois Falls (now Porquis Jct.) and Cochrane.
.....	1	Tie-plates	Tie-plating main line. First Division.
.....	2	Rail joints	Renewals, First Division.
8	3	Scrap and old matl.	Construction, C. P. entrance, North Bay.
426	682		

Other Materials Handled by Hand.

Cars.	Material.	Loaded at.	Unloaded at.	Purpose.
7	Black muck ..	Englehart	Haileybury ..	Garden plots, etc.
7	Black muck ..	Englehart	Cobalt	Garden plots, etc.
75	Crushed rock	Cobalt	New Liskeard	Paving Nipissing Central Extension. (Hart cars.)
9	Crushed rock	*Cobalt	Haileybury ..	Paving, etc., Nipissing Central, Ferguson Avenue.

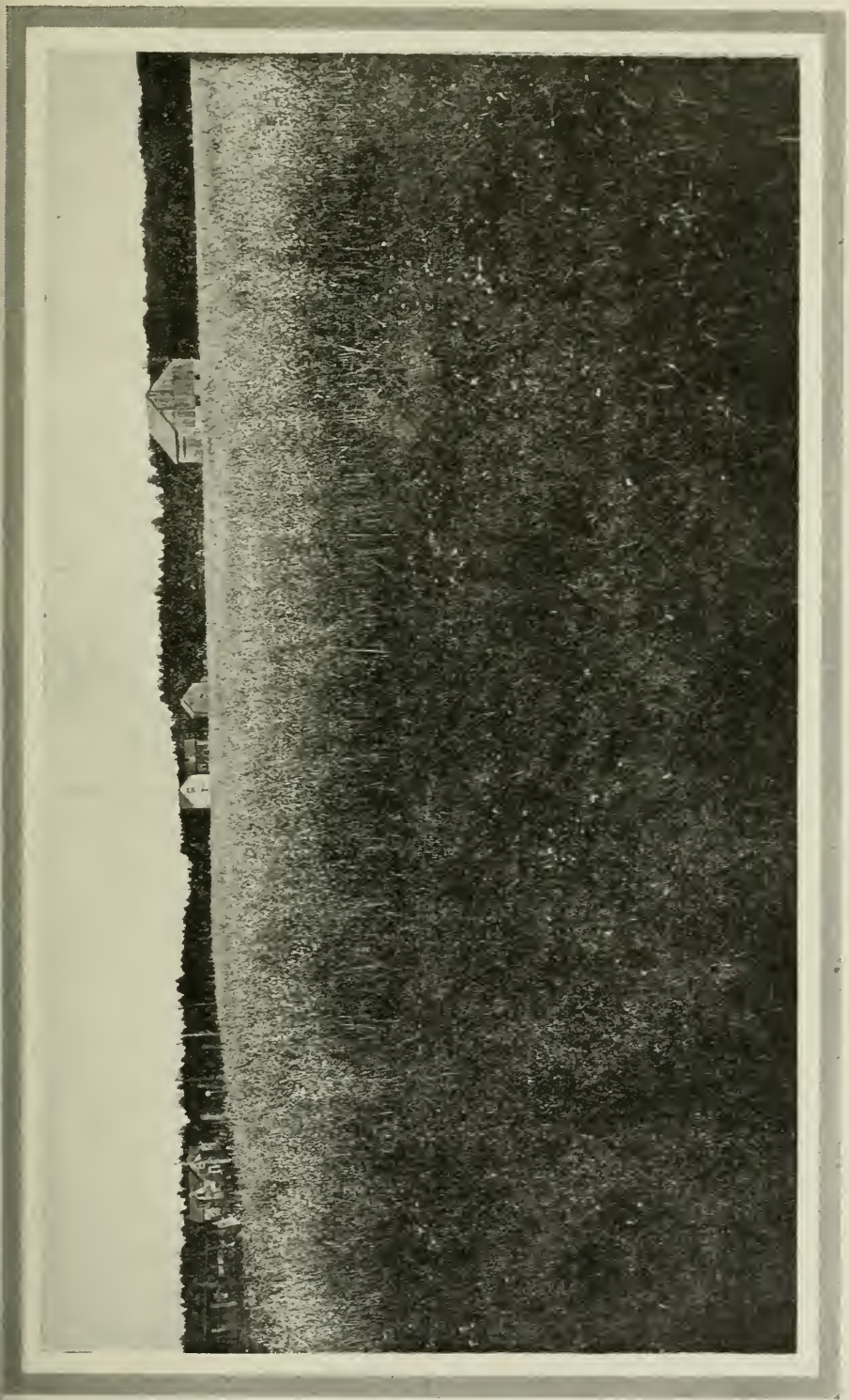
* Loaded by Engineer Code, of Township of Coleman. The above rock was received from Cobalt mines.

132	Broken stone .	†North Bay ..	North Bay ...	Paving, extension coal dump.

† Loaded by Contractor Avery.

Material Handled by 'American' Railroad Ditching Machine with Work Train

Cars. Loaded.	Cars. Unloaded.	Material.	Purpose.
140	.....	Ties.....	Construction Elk Lake Branch.
14	.....	"	Sold to Canadian Northern Railway.
2	.....	"	New through siding, Owaissa.
1	1	"	Van siding, Englehart.
7	3	"	Taken from old sidings, South Porcupine, shipped to Cochrane.
1	.....	"	Sidings taken up, Drinkwater Pit.
2	1	"	New entrance to Cochrane.
.....	1	"	New spur siding, M. P. 217.
7	1	"	Construction Iroquois Falls Branch.
9	.....	"	Construction Cochrane Terminals.
261	43	"	Tie Renewals (some of these handled by hand).
46	28	Rails.....	Rail Renewals.
1,063	1.063	Clay, etc.....	Cleaning cuts, Second Division.
237	237	Clay, etc.....	Cleaning cuts, First Division.
134	134	Muck.....	Loaded at M. P. 73½ and used for filling hole in rear of Timagami station.
30	30	Muck.....	Loaded at Uno Park; used for filling and coating station grounds, Latchford.
1	1	Rails.....	Extension freight shed spur, Cobalt.
4	3	"	Sidings taken up, South Porcupine.
1	.....	"	Sidings taken up, Drinkwater Pit.
40	2	"	Construction Iroquois Falls Branch.
7	7	Old telegraph poles..	Cleaning right of way; unloaded and cut into fence posts at Englehart.
2	2	Firewood.....	Cleaning right of way, Porcupine Branch.
4	.....	Pulpwood.....	Cleaning right of way, Porquis Junction.
4	.....	Logs.....	Cleaning right of way, Porquis Junction.
.....	2	Fence posts	Fencing main line, Porquis Junction north.
.....	3	Fence posts	Fencing, Iroquois Falls Branch (contract).
1	.....	Piles	Trestle Construction, Porcupine Branch.
1	1	Lumber, etc.....	Drinkwater Pit, abandoned (old camps).
1	.....	Camp material	Drinkwater Pit, abandoned.
1	.....	Scrap.....	Cleaning right of way, etc., Porcupine Branch.
.....	2	Sw. material.....	New entrance to Cochrane station.
1	1	Hand cars, etc.....	Handling construction plant.
1	.....	Car trucks.....	Clearing wreckage, Nellie Lake Pit.
1	.....	Angle bars.....	Construction Iroquois Falls Branch.
1	.....	Sw. material.....	Construction Elk Lake Branch.
.....	2	Cinders.....	Filling washouts, South Porcupine.
35	35	Stone.....	Filling washouts, South Porcupine.
5	5	"	Filling washouts, M. P. 241-244.
60	60	"	Rip-rapping embankments M. P. 84 (20) and 89 (40). Loaded at M. P. 78.
2.125	1.668		



Farm of Frank Konagh, Brentha, 1913.

ANNUAL REPORT BRIDGE AND BUILDING DEPARTMENT

Year Ending October 31st, 1913. W. J. Oldham, Bridge and Building Master

BUILDINGS.

North Bay.

General Offices.—Cabinets were made and installed in the offices of the Traffic Accountant, and the Freight and Passenger Agent. The interior of the building was cleaned and kalsomined.

Freight Shed.—General repairs were made to both freight shed and transfer platform.

Roundhouse.—The three boilers in the boiler-room were completely overhauled, new fire brick being used when found necessary. The concrete roof over seven of the stalls was removed and a new 3 in. x 3 in. pine roof put on. The pine was covered with 5 ply of tar paper, over the tar paper a coating of tar, and then gravel.

Coal Chutes.—During the severe storm of last March, the top of the chutes was blown off. Temporary repairs were made, and our forces are now engaged in putting on new covering. The approach trestle was surfaced and lined.

Stores Building.—New pigeon holes were built in the stationery room, and general repairs made to the building.

Old Carpenter Shop.—The entire roof of the building was covered with 16 oz. tar paper, and a new 40-foot smokestack erected.

Heater Room.—A portion of this building was destroyed by fire on December 23rd, and rebuilt by our own forces.

Ice House.—A new platform was built in one of the chambers, and new slides installed.

Stock Yard.—A 2 in. water main was laid from our steel tank to stock yard, giving a water supply to each pen.

New Store House.—A new building 30 ft. x 150 ft. was erected of galvanized iron divided off as follows: Ground floor—Road Department, 30 ft. x 75 ft.; Telegraph and Telephone Department, 30 ft. x 20 ft.; Bridge and Building Department 30 ft. x 55 ft. The Bridge and Building Department's portion was further divided into two rooms: A carpenter shop 30 ft. x 37 ft., and a paint shop 30 ft. x 18 ft. The upstairs floor—Road Department, 30 ft. x 60 ft.; Engineering Department, 30 ft. x 25 ft.; Bridge and Building Department, 30 ft. x 65 ft. All the old buildings used as store-rooms were taken down, material from which was used in the construction of this building.

Blacksmith Shop.—A new blacksmith shop was erected on material siding for Road Department—size 16 ft. x 18 ft.

Old Oil House.—This building was moved from old site to material siding. It was fitted up so that it could be used for storing cement, cement mixers and other machinery connected with the Bridge and Building Department.

Kit Room.—Cupboards for holding train telephones were installed.

A pipe line for heating and watering the coaches was put in along coach track.

General repairs were made to turntable, cinder hoist and track scales.

During the year, our forces fitted up 25 boarding cars. They handled 1,003,982 feet of different kinds of lumber.

The necessary repairs were made to all hand cars, lorries, motor cars and velocipedes by our shop staff.

Trout Mills.—General repairs were made to station and platform.

Feronia.—General repairs were made to freight shed, station and platform.

Widdifield.—The platform was overhauled, and light repairs made to station and baggageroom.

Tomiko.—Light repairs were made to station and platform.

Diver.—General repairs were made to station and platform.

Redwater.—Light repairs were made to station, and platform was overhauled.

Doherty.—A new standard tool house was built to take the place of the one destroyed by fire.

Temagami.—General repairs were made to station and restaurant. Five new No. 57 Belgian Globe Post Lamps were placed at intervals along platform so as to give a better lighting system.

Latchford.—Station doors and windows were repaired, and the entire platform overhauled.

Gillies Depot.—Light repairs were made to platform.

Cobalt.—A new drinking fountain was installed in waiting-room of station, and the heating system repaired.

North Cobalt.—Light repairs were made to platform and station.

Haileybury.—An extension 16 ft. x 30 ft. was put to the freight shed for storing oil, and a small building 8 ft. x 10 ft. was built for storing lamps. The north end of the platform was extended 75 feet.

New Liskeard.—Repairs were made to station floor, and the platform repaired.

Uno Park.—The station office was fitted up with a new ticket wicket, and general repairs made.

Thornloe.—The windows and doors were repaired.

Earlton.—During the big fires last June this station was burnt. We have just completed a new station 30 ft. x 60 ft. built on a concrete foundation with a platform 250 feet long.

Heaslip.—Light repairs were made to station and platform.

Englehart.—Station—Alterations were made to the telegraph and ticket office by building a room for employees 10 ft. x 12 ft. and cutting a door from waiting-room to telegraph office. Roundhouse—New grating was put in over pits, a portion of the floor was relaid and the boilers completely overhauled.

Swastika.—It was found necessary to put an addition 20 ft. x 30 ft. to the station to be used as a waiting-room, owing to having converted the old waiting-room into a telegraph office. The rock at freight shed was blasted out so as to make a good wagon road to the shed.

Dane.—General repairs were made to station and platform.

Matheson.—A new pipe fence was built around flower garden of station grounds. The partition was taken out between the freight shed and that portion of the freight shed used as a waiting-room before new station was built, and the whole building turned into a freight shed.

Porquis Junction.—A new pipe fence was put around flower garden of station grounds. A well 28 feet deep was dug. The cribbing used in this well was a 24 inch galvanized iron pipe.

Cochrane—Station—General repairs were made to doors and windows, and drainage system was overhauled.

Cochrane.—Coal Chutes—Approach trestle was surfaced and lined, and light repairs made.

Cochrane.—Roundhouse—Smoke stacks were renewed, doors repaired, and drainage system overhauled.

Cochrane.—Ice House—A new ice house 25 ft. x 75 ft. was built to hold 200 tons of ice.

Porcupine Branch.

Porcupine.—General repairs were made to station and platform. New storm windows were made, fitted and put on. Shelving was put in small room off baggage-room for storing old records.

South Porcupine.—A new freight shed 30 ft. x 60 ft. was constructed. New storm windows were made, fitted and put on.

Schumacher.—Light repairs were made to station and platform. New storm windows were made, fitted and put on. A stock chute was made by our forces at North Bay Jct. and shipped to this point.

Timmins.—New storm windows were made, fitted and put on. All windows in waiting-room and office were equipped with new window shades. A small room at one end of the freight shed was fitted up for a record room by putting in shelving.

Charlton Branch.

Charlton.—The office of the station was converted into a waiting-room by changing partition and cutting out new door. The office was placed in back of building.

Elk Lake Branch.

Elk Lake.—A station 26 ft. x 73 ft. with a platform 12 ft. x 95 ft. was completed in time for the office staff to receive the first passenger train which pulled into Elk Lake. In addition to the station we built the following buildings: A freight shed 26 ft. x 50 ft., with a platform 6 ft. x 60 ft., a coal shed 10 ft. x 24 ft., and a bunk room 14 ft. x 24 ft.

Kerr Lake Branch.

Kerr Lake.—General repairs were made to station and freight shed. Engine shed and cinder pit were also repaired.

TANKS.

Widdifield.—A new 40,000 gallon frame tank was built on a concrete foundation. It was necessary to drive piles at this point. A pump house 12 ft 6 in. x 20 ft. 6 in. and a coal shed 12 ft. 6 in. x 20 ft. 6 in. were also built. A small room in the pump house was set aside for the pumpman to live in.

Tomiko.—A new 40,000 gallon frame tank was built on a concrete foundation. A pump house and coal shed were built the same as at Widdifield, with the exception that a small frame building 10 ft. x 15 ft. was built close to the pump-house for the pumpman to live in. An 8 in. pipe line 300 feet long was put in from the river to the tank.

Redwater.—General repairs were made to the tank.

Temagami.—A new pump house 14 ft. x 18 ft. was built, and the coal shed moved across the track to the new pump house. The pump and boiler were moved out of tank and placed in new pump house.

Latchford.—General repairs were made to the tank.

New Liskeard.—The tank was braced, papered and sheeted on the inside.

Englehart.—General repairs were made to tank.

Swastika.—A new 4 in. pipe line was put in from the river to the tank.

Bourkes.—This tank was braced, sheeted and papered on the inside.

Matheson.—The tank was papered and sheeted on the inside. Two new staves were put in the tub.

Porquis Jct.—The temporary tank at this point was taken down and moved to M.P. 17½ Porcupine Branch, then later moved from there to M.P. 24½ Elk Lake Branch.

Cochrane.—General repairs were made to tank and pump house.

Porcupine Branch.—Moved temporary tank and pump house from South Porcupine to Connaught, and put in 300 feet of 6 in. pipe from the river to the tank.

Elk Lake Branch.—Erected a new 40,000 gallon frame tank with a pump house 12 ft. 6 in. x 20 ft. 6 in., and coal shed 12 ft. 6 in. x 20 ft. 6 in., at M.P. 8 Elk Lake. Br. A 4 in. pipe line was put in from the Lake to the pump house, a distance of 1,100 feet.

Temporary tank was taken from M.P. 17½ Porcupine Branch, and put up at M.P. 24½ Elk Lake Branch. A small building 16 ft. x 18 ft. was put up close to the tank for the pumpman to live in.

DWELLINGS.

Widdifield.—The section house was painted and kalsomined on the inside, and foundation repaired.

Tomiko.—The interior of the section house was painted and kalsomined, and a new porch built.

Latchford.—A 6 in. sewer pipe line 134 feet long was put into the Agent's dwelling. A plank walk was built from the Agent's dwelling to station platform.

Cobalt.—Plumbing was installed in Agent's house, and a 65 foot sewer pipe line put in. The same length of sewer was put into section house, and both houses were kalsomined and painted on the inside.

Haileybury.—A new hot water heating system was installed in the Agent's house.

Thornloe.—The ceiling of section house was lined with Georgia pine.

Swastika.—The interior of Agent's house was papered, and new storm doors put on.

Cochrane.—A new kitchen 14 ft. x 16 ft. was built in connection with Locomotive Foreman's dwelling. A concrete foundation was put under the main building as well as the kitchen.

Porcupine Branch.

Schumacher.—A frame house 22 ft. x 28 ft. was built for the Agent.

Elk Lake Branch.

Section dwellings 20 ft x 27 ft. were built on concrete foundations; kitchens 10 ft. x 13 ft. attached, woodsheds 14 ft. x 20 ft., and tool houses 10 ft. x 14 ft. were built at the following places:

Elk Lake,
Osseo
Kenabeck,
Earlton.

Portable Stations 9 ft. 6 in. x 30 ft. with cinder walks were built at the following places:

Kenogami,
Wicklow,
Dack,
Three Nations,
Ramore,
Wataybeag,
Nahma.

Our paint gang started out on the road on April 22nd, and painted the following buildings:

All new buildings constructed during the season.
Temagami tank,
Englehart bunkhouse,
Cochrane bunkhouse.
All section houses and tanks north of Englehart.
All switches, train order boards and semaphores.

GENERAL WORK.

All new buildings constructed during the past season were equipped with the necessary fire protection.

In season, storm doors and windows, screens and screen doors were put in place on the different buildings, and the heating systems were carefully looked after and repairs made where necessary.

BRIDGES AND TRESTLES.

Bridge.....	Chippawa Creek..		An additional pile bridge to carry another track was put in at this point. This was necessary owing to the changes made to main line
Bridge.....	M.P.	7.96.....	The deck was renewed on iron span.
Trestle.....	M.P.	25.71.....	New bents, caps and girths were put in.
Bridge.....	M.P.	30.97.....	The deck was renewed.
Trestle.....	M.P.	42.18.....	The trestle was surfaced and lined, new bents, girths and braces were put in.

Trestle.....M.P. 48.90.....The trestle was surfaced and lined, and piles driven for concrete abutments.

Trestle.....M.P. 55.36.....Two lines of 30 inch concrete pipe were put in. Trestle was filled, and stringers and ties taken out after filling.

Trestle.....M.P. 55.94.....Trestle was surfaced and lined, and new caps, girths and bents were put in.

Trestle.....M.P. 57.31.....Trestle was surfaced and lined, and new bents, girth and caps put in.

Trestle.....M.P. 58.75.....Trestle was surfaced and lined, and new caps, bents and girths put in.

Trestle.....M.P. 59.41.....Trestle was surfaced and lined, and new girths, bents and caps put in.

Trestle.....M.P. 68.75.....Two lines of 30 inch concrete were put in, and trestle filled. Stringers and ties were taken out after filling.

Trestle.....M.P. 69.91.....This trestle was filled, and stringers and ties taken out after filling. Two lines of 30 inch concrete pipe were put in.

Trestle.....M.P. 70.20.....Rock was taken out to change course of stream. Trestle was filled, and stringers and ties taken out.

Trestle.....M.P. 71.37.....The mud sills were renewed, and bents and caps put in.

Trestle.....M.P. 75.44.....The trestle was surfaced and lined, filled and stringers and ties taken out.

Trestle.....M.P. 105¼.....All trestle work at this point along with steel bridge was taken down and shipped to North Bay Junction.

Bridge.....M.P. 138.00.....This bridge was surfaced and lined.

Bridge.....M.P. 146.00.....The bridge was surfaced and lined.

Bridge.....M.P. 153.50.....Concrete abutments were put in at this point for a new steel bridge.

Trestle.....M.P. 162.08.....The trestle was surfaced and lined.

Trestle.....M.P. 163.13.....The trestle was surfaced and lined, and new girths and braces put in.

Trestle.....M.P. 175.00.....Trestle was surfaced and lined, and a new deck put on.

Trestle.....M.P. 178.75.....Cross logs were put in the foundation of this trestle, then filled and ties and stringers taken out.

Trestle.....M.P. 181.25.....Trestle was surfaced and lined, and new girths and caps put on.

Bridge.....M.P. 196.80.....Concrete piers were put in for a new steel bridge. The work at this bridge and also at bridge M.P. 153½ are two of the largest pieces of work of this description ever undertaken by our own forces.

Kerr Lake Branch.—General repairs were made to all trestles on this Branch. The trestles at M.P. 4½ was renewed, 26 new bents were put in.

Elk Lake Branch.—Trestle at M.P. 11½ was surfaced and lined, and new braces put in. Trestle M.P. 22 was surfaced and lined, filled, and stringers and ties taken out. A new concrete arch culvert was built at M.P. 27½.

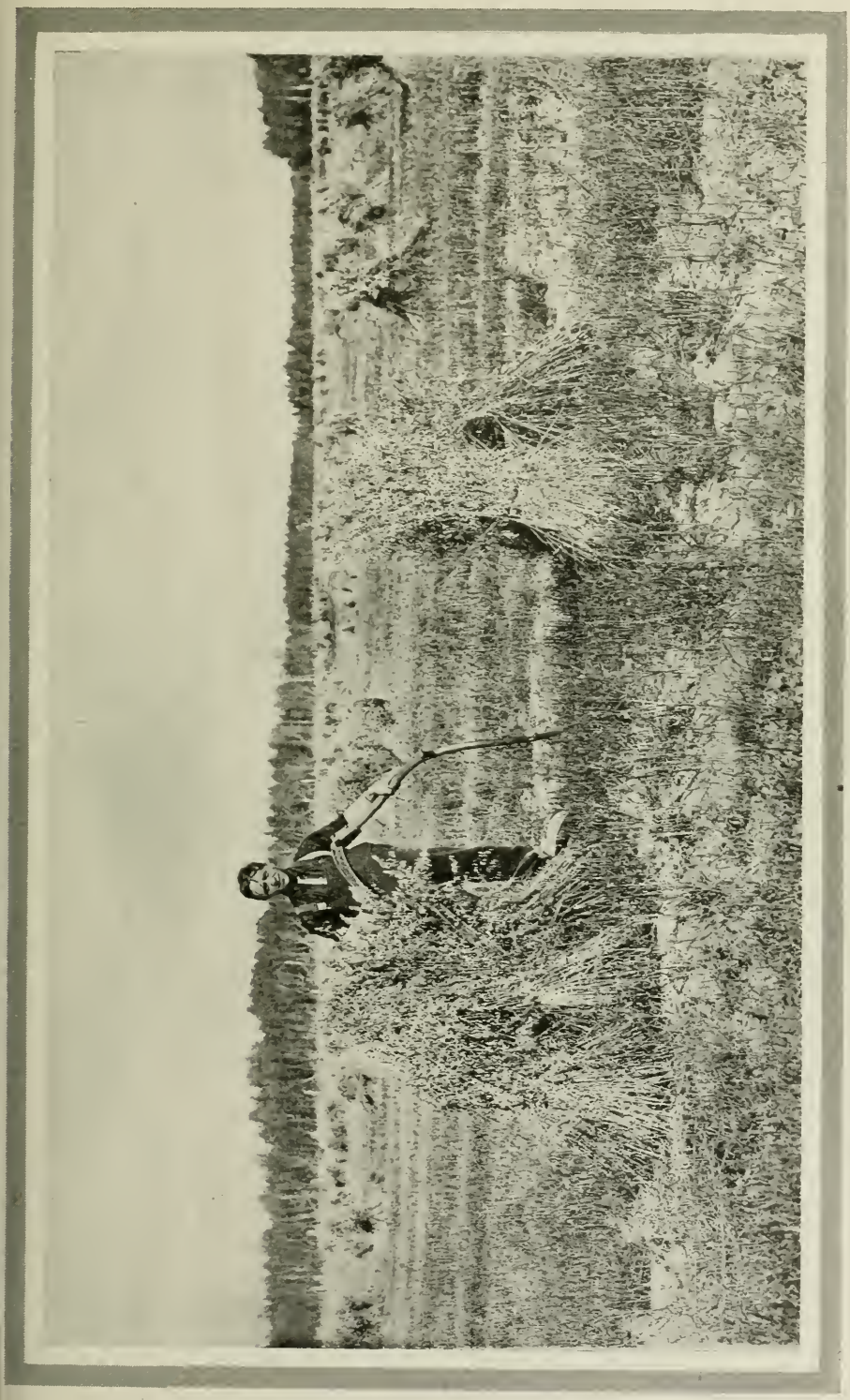
Charlton Branch.—Trestles at M.P. 1¼, 6¼ and Long Lake were surfaced and lined, new bents and braces put in.

Porcupine Branch.—Trestle at M.P. 10¼ was surfaced and lined, and bents, girths, and braces renewed.

CULVERTS.

Main Line.—At M.P. 162¾, 240 feet of 30 inch cast iron pipe was used in renewing culvert. Culvert M.P. 242 was repaired.

Porcupine Branch.—Culverts at M.P. 7¼ and 6¾ were repaired.



Farm of O. Prevost, Chamberlain, 1913.

TELEGRAPH DEPARTMENT

Year Ending October 31st, 1913. W. J. Kelly, Telegraph Supervisor.

During the year the telegraph and telephone lines have been maintained in excellent condition, and the system has been considerably extended and enlarged.

Telephone Train Despatching:

The installation of the telephone train-despatching equipment on the main line, North Bay to Cochrane, and the Porcupine Branch, Porquis Junction to Timmins, was completed in July. Instruments and switchboards were placed in despatcher's office and twenty-seven way stations, while all passenger trains were equipped with portable train sets. The telephone train-despatching circuit is 286 miles, the longest yet installed by the Northern Electric Company.

The two No. 9 copper wires for this circuit had been previously strung and were in telegraph service. In order to release them a new No. 8 iron wire was strung from New Liskeard to Cochrane. It was necessary also to replace the two-pin by six-pin cross-arms between Englehart and Cochrane.

Elk Lake Branch:

A pole lead, forty poles to the mile, with six-pin arm, was constructed on the new Elk Lake Branch from Earlton to Elk Lake, a distance of 28.5 miles. Two No. 8 B.W. gauge iron wires for telegraph and two No. 10 N.B.S. gauge copper wires for Commercial long distance telephone service were strung.

Iroquois Falls Branch:

A pole lead, forty poles to the mile, was built along the Iroquois Falls Branch, from Porquis Junction to Iroquois Falls, a distance of seven miles. Two No. 8 B.W. gauge iron wires and two No. 10 N. B. S. gauge copper wires for telegraph and commercial telephone service were strung.

Commercial Telephone Service:

Connections were made with the Temiskaming Telephone Company at Cobalt, New Liskeard, and long distance business is interchanged.

A local exchange was installed at Swastika, and a pole line was built from Swastika to Kirkland Lake, a distance of six miles. The leading mines and business houses have telephone services with long distance connection through the Swastika exchange.

A metallic circuit of No. 8 iron wire was installed between Matheson and Porquis Junction, a distance of twenty miles. Eight telephones have been installed at intermediate points. This line interswitches with regular long distance line at Matheson and Porquis Junction.

Long distance service has been extended to Elk Lake.

Maintenance.

No serious delays to business occurred during the year through interruptions.

General repairs were made on telegraph and telephone lines over the whole system.

Between M.P. 250 and M.P. 253, two miles of poles were erected on account of deviation of main line.

Between M.P. 227 and M.P. 229, thirty-eight poles were moved on account of deviation.

Between M.P. 150 and M.P. 151 twelve poles were moved on account of siding.

Between M.P. 77 and M.P. 78, twenty poles were moved on account of siding.

At North Bay sixteen new poles were put up on account of new main line and C. N. R. crossing main line.

At Earlton fire occurred, destroying fifteen telegraph poles and all telegraph and telephone equipment in the station. This was renewed and office opened in temporary building.

At North Bay, a yard telephone system was installed between the general offices and yard office. Six telephones were installed in the different offices between these points.

All open wires leading into way stations were replaced by cable.

The following telephones have been installed during the year:

Commercial Long Distance Telephones	35
Train Despatching Telephones, Way Stations	27
" " " Ballast Pits	2
Passenger Trains	6
Auxiliary Cars	2

Permanent telegraph and telephone business opened at Elk Lake.

Temporary telegraph and telephone offices at the following points:

Woodland Pit,
Redwater,
M.P. 78,
Cassidy Pit,
Elk Pit.
Bourkes,
Nellie Lake Pit,
Nahma.

Summary.

Summarizing the above reports, the following construction work was performed during the year:

Forty-three miles of new pole lead was constructed.

Three hundred and eighty-one miles of wire was strung, made up as follows:

Location.	No. of Miles.	Description.	Pole Lead Miles.
Main Line	160	No. 8 Iron	
Main Line	2	No. 9 Copper	2
Elk Lake Branch	57	No. 10 Copper	28
Elk Lake Branch	57	No. 8 Iron	
Elk Lake Branch	22	No. 12 Iron	
Iroquois Falls Branch	14	No. 10 Copper	7
Iroquois Falls Branch	14	No. 8 Iron	
Swastika Telephone Line	55	No. 12 Iron	6

Forty miles of No. 12 copper wire was taken down.

The total miles of wire in service is 2,997.

The following tables show the telegraph and telephone wires and equipment in use on the system:—

Wire.	Gauge.	Weight	Service.	Miles.
Iron	No. 8 B. W	378	Telegraph	1,407
Iron	No. 8 B. W	378	Party Telephone	50
Iron	No. 12 B. W	165	Party Telephone	77
Copper	No. 9 B. & S	210	Telephone Train Despatching	574
Copper	No. 10 N. B. S	263	Long Distance Com.	658
Copper	No. 12 B. & S	105	Local Party Line	231

Total mileage—Wire, 2,997.
" " —Poles, 343.

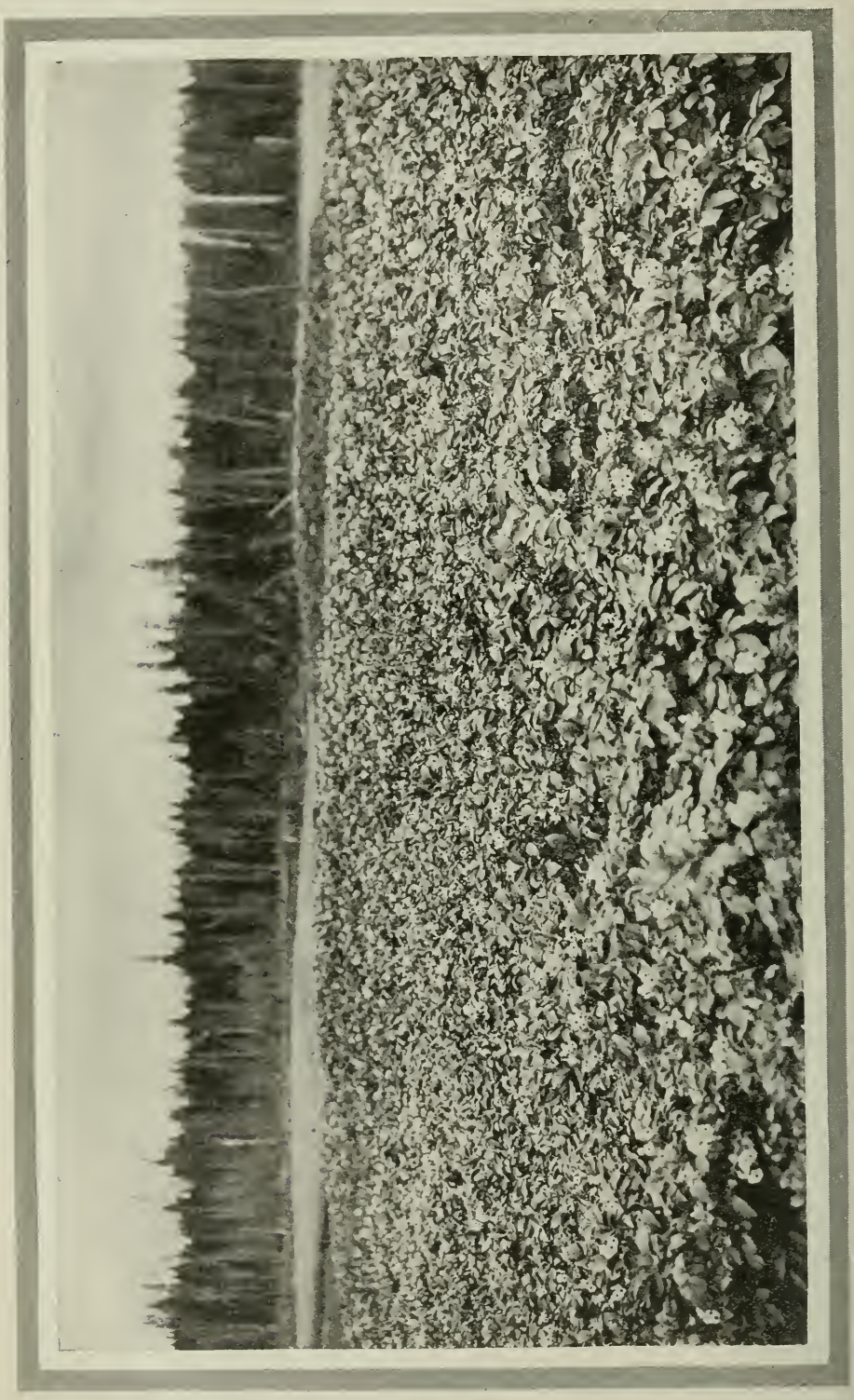
Schedule of Telephones in Service, October 31st, 1913.

Mileage.	Place.	Building.	Office Telephone.	Cabinet Telephone.	Switch.
0	North Bay	Bell Telephone Central			
0	"	Yard	6		
8.68	Feronia	Post Office	1		1
13.52	Widdifield	Station	1		1
26.	Tomiko Mills	Ferguson & McFadden's Office	1		
26.	" "	Man'g Bucknam's Office	2		
27.31	Tomiko	Station	1		1
32.11	Jocko	Hawkesbury Lumber Co.'s Office	1		
33.9	Riddle	Station	1		
39.84	Diver	Station	1		1
47.13	Bushnell	Section house	1		
48.40	Kenney Siding	Span. River Pulp & Paper Co.'s Office	1		
71.8	Timagami	Station	1	1	1
79.5	Siding	Black and Wagar Office	1		
81.5	Siding	Haight & Dickson's Office	1		
82.96	Rib Lake	Section House	1		
89.44	Johnson	" "	1		
94.13	Latchford	Station	1	1	1
98.55	Gillies Depot	Station	1		
102.8	Cobalt	Timis. Tel. Co	1	1	1
102.8	"	Yard	5		
105.7	North Cobalt	Yard (N.C.R.)	1		
107.44	Haileybury	Town Office	1	1	1
107.44	"	Station	1		
107.44	"	Yard (N.C.R.)	1		
112.64	New Liskeard	Timis. Tel. Co.	1		
118.13	Uno Park	Station	1		1
128.59	Earlton	Station	1		1
138.49	Englehart	Station	1	1	1
138.49	"	Yard	4		
159.74	Dane	Station	1		1
164.70	Swastika	Central	14	1	1
205.27	Matheson	Station	1		1
205.27	"	Town (Party Line)	1		
208.4	Watahbeag	Party Line	1		
212.8	Homer	"	1		
215.1	Nushka	"	1		
218.0	Monteith	"	1		
222.0	Kelso	"	3		
224.87	Iroquois Falls	Station	1		1
253.10	Cochrane	Station	1	1	1
253.10	"	Yard	3		
ELK LAKE BRANCH—					
28.5	Elk Lake	Station	1		
PORCUPINE BRANCH—					
26.70	South Porcupine	Station	1	1	1
33.2	Timmins	Station	1		
			74	8	17

Total Telephones:—82.

Schedules of Switches and Instruments in Service, October 31st, 1913.

Mileage.	Place.	Building.	Telegraph sets Instruments.	Telephone Train Despatching.	Switches Size.
0	North Bay.....	Supt.of Traffic Office..	.....	1	.....
0	"	Chief Despr's Office...	.....	1	.....
0	"	Dispatcher's Office ...	5	3	10 line
0	N. Bay Jet.....	Yard Office	2	1	4 "
13.52	Widdifield	Station	2	1	2 "
27.31	Tomiko.....	"	3	1	6 "
39.84	Diver.....	"	2	1	4 "
55.54	Redwater.....	"	.....	1	.....
71.8	Timagami	"	3	1	10 "
94.13	Latchford.....	"	3	1	4 "
98.55	Gillies	"	2	1	2 "
102.8	Cobalt.....	"	2	1	4 "
102.8	"	Town Office.....	3	.....	10 "
105.69	North Cobalt.....	Station..	2	1	2 "
107.44	Haileybury.....	"	3	1	10 "
107.44	"	Town Office.....	4	.....	4 "
112.64	New Liskeard.....	Station.....	3	1	10 "
112.64	"	Town Office.....	2	.....	2 "
118.38	Uno Park.....	Station.....	2	1	2 "
124.78	Thornloe	"	2	1	2 "
128.59	Earlton	"	3	1	6 "
134.93	Heaslip	"	2	1	2 "
138.49	Englehart	"	3	1	6 "
159.74	Dane	"	2	1	2 "
164.7	Swastika.....	"	3	1	4 "
182.48	Bourkes.....	"	.....	1	.....
205.27	Matheson.....	"	3	1	4 "
224.87	Iroquois Falls	"	3	1	10 "
253.1	Cochrane.....	"	3	1	4 "
ELK LAKE BRANCH—					
28.5	Elk Lake.....	Station.....	1	.....	.....
CHARLTON BRANCH—					
7.06	Charlton	Station.....	1	.....	2 "
PORCUPINE BRANCH—					
24.10	Porcupine	Station.....	3	1	10 "
26.7	So. Porcupine.....	"	3	1	10 "
31.7	Schumacher	"	3	1	2 "
33.2	Timmins	"	3	1	4 "
	Ballast Pits.....		.....	3	.....
	Passenger Train Sets.....		.....	6	.....
	Auxiliary Car.....		.....	2	.....
	Private Car.....		.....	2	.....
			81	45	.....



Potatoes. R. Heaslip, Evanturel, 1913.

ANNUAL REPORT OF SUPERINTENDENT OF TRAFFIC

Year Ending October 31st, 1913.

W. A. GRIFFIN, S. OF T.

The fiscal year ending October 31st, 1913, from a traffic standpoint, has been successful, considering the large decrease in tonnage, account of contractors' materials *et al* destined to points on the Transcontinental Railway, via Cochrane, which was a large revenue factor previous years.

Thankful to report we have been free from accidents of a serious nature. Every precaution has been taken in handling of trains, and it has been the aim of the Commission to give its patrons satisfactory service.

Effective February 5th, 1913, Elk Lake—Elk Lake sub-division, extending from Earlton Junction to Elk Lake, a distance of 28.5 miles, was opened for freight and passenger traffic.

August 13th, 1913, Elk Lake sub-division, opened as a regular telegraph office. Messages to and from Gowganda, being routed via Elk Lake.

Effective August 17th, 1913, commenced handling movements of trains by telephone. Our experience in the use of the telephone has proven that it is a great advance over the telegraph, not only as a safety factor, but in the more economical operation of trains, *et al.*

September 9th, 1913, freight train service was inaugurated over branch, Porquis Junction to Iroquois Falls (Works of the Abitibi Pulp and Paper Company, Limited).

Necessary time-table changes have been made to meet summer and winter requirements. Time-table No. 26, made effective January 26th, 1913, and time-table No. 27, effective June 29th, 1913. Current time-table shows trains Nos. 1 and 2, daily, between North Bay and Cochrane. These trains are equipped with standard C.P.R. sleepers, with inter-line service, via C.P.R. to Montreal. Trains Nos. 46 and 47, daily, between North Bay and Englehart, with inter-line service, via G.T.R. to Toronto. These trains are equipped with Pullman and parlor-cafe cars between North Bay and Englehart. Trains Nos. 50, 51, 52 and 53 daily between Timmins and Porquis Junction connecting with main line trains. Trains Nos. 60 and 61 daily, except Sunday, between Earlton Junction and Elk Lake, making connections with Trains Nos. 47 and 2 at Earlton Junction. Train No. 4 daily, except Sunday, Englehart to Cobalt. Passenger traffic between Cobalt and Kerr Lake taken care of by trains Nos. 32, 33, 34 and 35, daily, except Sunday, and trains Nos. 72 and 73, Wednesdays and Saturdays only. Charlton Branch, passenger traffic handled by Trains Nos. 23, 24, 25 and 26, daily, except Sunday, making connections at Englehart with main line trains.

Following derailments and accidents occurred during the year:

1912.

November 14th, Cobalt Yard, switch engine No. 150 derailed at switch leading to Princess Siding. Cause, unknown. Slight damage to track—no damage to engine.

November 19th, Train No. 47 passing through Nushka Yard struck sleigh left too close to main track, breaking steps off second-class coach No. 4.

November 21st, at Schumacher, while coupling engine No. 108 to baggage car, Brakeman J. McAndrews received slight injuries by having hand pinched between operating lever and back of tender.

November 23rd, at M. P. 51, Train No. 1 struck and killed moose.

November 21st, New Liskeard, car N. Y. N. H. & H. No. 89104 pushed over stop-block. Cost of repairs to track, $2.20; replacing and repairing car, $17.36. Brakeman responsible disciplined.

December 6th, spur track, M. P. 10½, North Bay sub-division, car L.S. & M. S. No. 22886 derailed. Cause, spread track. Damage track material cost of repairs, $8.55.

January 6th, Latchford, Brakeman threw cross-over switch in face of extra No. 137, resulting in train backing into side of Train No. 46, damaging Pullman cars "Wizard" and "Elliston," G. T. parlor-cafe car No. 2605. Brakeman responsible dismissed.

January 11th, Englehart Yard, G. T. No. 12636 derailed at No. 5 siding. Cause—switch improperly set. Slight damage track.

January 16th, North Bay freight shed, Nicholas Roumanous sustained slight injury owing to inability to turn truck, getting knee caught between arm of truck and post which supports roof of transfer platform. Resumed duty, January 20th.

January 17th, Englehart Yard, while yard crew were making up train for Charlton, two box cars missed coupling and ran down siding, striking baggage car No. 11 and coach No. 106, damaging same extent of $180. Brakeman responsible disciplined.

January 23rd, North Bay Junction Yard, Engine No. 152 in charge of hostler backed into cars handled by switch engine No. 151, damaging coaches Nos. 30 and 110 slightly.

February 6th, North Bay Junction Yard, car C. P. No. 182948 containing beer, destined Cochrane, Ontario, slightly damaged by fire. Cause, "Economy" heater exploding.

February 11th, Redwater, G.T.P. Engine No. 4 in charge of T. & N. O. enginemen, derailed while taking siding. Cause—sharp flange.

February 10th, while Extra No. 123 South passing M. P. 250, car C. P. No. 24885 derailed. Cause—broken wheel. Auxiliary from Cochrane. Delayed No. 46, one hour and fifty minutes.

February 12th, log spur, M. P. 26, engine No. 114 derailed. Cause—spread track. Account covering cost, etc., rendered against Messrs. Milne and Sons, owners of private siding.

February 13th, Cochrane Yard, engine No. 107 in charge of Fireman Joseph McCann and Brakeman A. Souliere, backed foul of main track and side swiped by engine No. 122. Fireman McCann injured, removed to Lady Minto Hospital, New Liskeard. Died February 17th.

February 14th, M. P. 174, Train No. 47 struck hand car, breaking cylinder cocks on left side of engine and damaging hand car slightly. Foreman responsible disciplined.

February 19th, North Bay Junction Yard, car U. R. R. No. 5721 derailed, caused by brakeman throwing switch before car clear. Brakeman censured.

February 20th, Englehart Yard, engine No. 104 in charge of hostler ran over stop-block off end of steel. Hostler dismissed.

February 26th, while extra No. 131 South passing M. P. 139 car L. S. & M. S. No. 14096 derailed. Cause—broken wheel. Car replaced and skidded into Englehart.

March 1st, while switching in Englehart Yard, 4.55 a.m., Brakeman L. G. Faught slipped between cars, one truck passing over right leg, necessitating amputation at thigh. Removed to Lady Minto Hospital, New Liskeard, and succumbed to injuries sustained March 2nd. Inquest held—verdict—accidental death.

March 3rd, while train No. 83 passing M.P. 24, North Bay sub-division, car B. & O. No. 94186 derailed. Cause, broken rail. No damage.

March 4th, while Extra 129 North passing M. P. 136¼, car G. T. P. No. 340046 derailed. Cause, broken wheel. Estimated damage track and equipment, $103.

March 10th, M. P. 222, Train No. 46 struck and killed pig. Owner, Thos. Falconer, Goldlands.

April 1st, North Bay Junction Yard, while placing P. & R. No. 15914 on track No. 4, car C. P. No. 55992 was struck with sufficient force to break end sill and one corner post. Estimated damage, $30. Brakeman responsible dismissed.

April 7th, Cobalt Yard, T. & N. O. car No. 60277 derailed. Cause—loose wheel. Slight damage to track. Party responsible for mechanical defect dismissed.

April 9th, while Train No. 24 passing M. P. 1, Charlton sub-division, cars T. N. O. No. 60207, logs; C. P. No. 12209 and 58124, pulpwood, derailed. Cause, broken wheel T. N. O. No. 60207. Estimated damage equipment, $1,025. Cost repairing track and wrecking, $98.80.

April 16th, while Extra No. 102 passing M. P. 77, car G. T. R. No. 24839 derailed. Cause, unknown. Re-railed by train crew. Estimated damage track material and labour, $306.33.

April 21st, South Porcupine, while Extra No. 103 with cars ahead of engine moving into Dome Mines Spur, second car struck wagon which was foul of main track. Horses were standing some distance away, took fright and ran into creek, one drowned.

April 28th, while switching in Englehart Yard, boarding cars Nos. 60087, 60144 and 60132 broke away, colliding with other cars in siding, slightly injuring two employees who were in boarding cars. Brakeman responsible disciplined.

May 17th, Public Road Crossing, M. P. 222, Train No. 46 struck and killed pig. Owner, H. C. Culver, Kelso.

May 17th, Public Road Crossing, M. P. 206, Train No. 47 struck and killed cow. Owner, D. Johnson, Matheson.

May 18th, M. P. 72¼, Train No. 87 struck and killed cow. Owner, O. Perrin, Timagami.

May 29th, M. P. 17½, Train No. 47 struck hand car, damaging frame. No damage to engine.

May 29th, M. P. 129½, Train No. 2 ran into herd of cattle, killing one cow. Owner, E. Peters, Earlton Junction.

May 30th, M. P. 11, Extra No. 138 South, struck and killed large moose.

May 31st, public Road Crossing Trout Mills, Train No. 2 struck and killed cow. Owner, J. Steel, Trout Mills.

June 4th, M. P. 191½, tender truck of Engine No. 108, Train No. 47 jumped track, and ran five pole lengths, damaging about five hundred ties. Detention, one hour forty-five minutes re-railing truck. Damage track and labour repairing, $113.75. Cause unknown.

June 8th, M. P. 32¾, Porcupine sub-division, Train No. 51 struck and killed cow. Owner, A. Mosciatt, Timmins.

June 8th, Cochrane, while engine No. 127 in charge of hostler, derailed at turn-table. Damage track material slight. Responsible party disciplined.

June 12th, M. P. 17, North Bay sub-division, Extra No. 109 North, struck hand car, injuring sectionman Olen Kexrisne, who was removed to hospital, North Bay. Fully recovered.

June 22nd, M. P. 250½, Train No. 1 struck and killed horse. Owner E. Cassard, Cochrane.

June 23rd, while Train No. 85 passing through temporary siding M. P. 78½, G. T. refrigerator No. 46637 derailed. Cause—excessive speed over temporary track. Estimated damage to equipment $122. Damage track and labour repairing, $375. Auxiliary ordered from North Bay Junction. Detention to Train No. 47, one hour and fifteen minutes. Engineer and Conductor disciplined.

June 25th, while car P. R. No. 13217 standing on No. 3 track, North Bay Junction, fire broke out. Cause—matches igniting. Estimated damage to car, $75. Contents slightly damaged fire and water.

June 26th, while Train No. 81 passing M. P. 101, car C. N. R. No. 69602 derailed. Cause—low joint. Detention, forty-five minutes.

July 3rd, M. P. 136½, Train No. 2 struck and killed cow. Owner, John McFadden, Heaslip.

July 4th, M. P. 25, North Bay Junction sub-division, Train No. 47 struck and badly damaged hand car.

July 4th, Timmins, Engine 111, while backing down coach track, struck coach No. 104, which had been left foul, damaging same extent of $294.67. Responsible party dismissed.

July 10th, Public Road Crossing, M. P. 136, Work Extra No. 105 struck and killed cow. Owner, A. Houghton Heaslip.

July 11th, while Extra No. 137 South passing M. P. 32, North Bay sub-division, G. T. Refrigerator No. 46504 derailed. Cause—unknown. No damage to car. Damage track material and labour repairing $127.76.

July 12th, while G. T. R. Extra returning from C. P. R. Depot, North Bay to North Bay Junction, switch engine No. 152 side swiped same, damaging G. T. coaches Nos. 1749 and 1783 extent of $125. Responsible party disciplined.

July 14th, while switching North Bay Junction, engine No. 126, with van, struck G. T. flat No. 69908 standing foul of lead. Estimated damage, $40. Switchman responsible resigned, pending investigation.

July 17th, Latchford, while Extra 122 South switching cars Rossing Plant, cars G. T. Nos. 3979 and 25071 broke away running over end of stop block. Estimated damage to equipment, $149.50. Estimated damage to track material and labour, $31. Responsible party dismissed.

July 17th, M. P. 205, Train No. 1 struck and killed horse. Owner, W. Monahan, Matheson.

July 18th, M. P. 227, Work Extra No. 105 struck and killed cow. Owner, Fred Brown, Porquis Junction.

July 22nd, M. P. 167¾, Passenger Extra No. 115 struck and damaged hand car. Two sectionmen slightly injured.

August 7th, North Bay Junction Yard, switch engine No. 119 backed into G. T. Extra No. 1261, slightly damaging car C. P. No. 109136, and turning over car C. P. No. 104148 loaded with stock. A. Contois in charge of stock slightly injured. Damage to equipment, $520. Responsible party disciplined.

August 9th, M. P. 92, Train No. 1 struck hand car, injuring sectionman Caniko Migperi, removed to the Mines' Hospital, Cobalt. Fully recovered.

August 20th, Cobalt Yard, Extra 106 South backing into Lake Shore Siding to set coach off, George Coombs, aged ten, tripped and fell while running across track in front of coach, which passed over both legs at knees. Removed to Mines' Hospital, Cobalt.

August 26th, Arthur Pageau fell off Train No. 1 at M. P. 71. Picked up by Train No. 2 and brought to North Bay. Slightly injured. Fully recovered.

August 26th, M. P. 140, Extra 115 South ran into herd of cattle, killing one steer. Owner, Lewis Susman, Englehart.

September 5th, Swastika, Extra 114 South, struck and killed cow. Owner, J. England, Swastika.

September 7th, Cobalt, Train No. 46 struck and killed cow. Owner, O. Chartrand, Cobalt.

September 13th, M. P. 49, Train No. 46 struck and killed moose. Derailed pony trucks. Detention thirty-five minutes. Damage track material and labour $18.04.

September 15th, M. P. 77½, Extra No. 140 South, struck and killed cow. Owner, Messrs. Black and Wagar, Duncan Lake.

October 2nd, Train No. 52 passing M. P. 10½, Porcupine sub-division, tender and baggage car No. 13 derailed. Cause broken axle on tender.

October 8th, M. P. 132, Extra No. 121 North, struck and killed heifer. Owner, Paul Bruan, Heaslip.

October 8th, Diver, Train No. 46, alleged struck and killed three pigs. Owner, W. A. Fraser, Diver.

October 15th, Latchford, while Extra No. 106 South switching at Latchford, William Mennie, employee, Canadian Pulp and Lumber Company, while hanging onto side of car, which was being moved, rolled between car and pile of ties. Removed to Mines' Hospital, Cobalt, succumbed to injuries, October 17th.

October 16th, Charlton, Train No. 26 alleged struck and killed cow. Owner, unknown.

Herewith reports Dr. McMurchy, North Bay; Dr. Fisher, New Liskeard; Dr. Lowery, Englehart; Dr. Harcourt, Elk Lake; and Dr. Moore, Schumaker, covering medical attendance.

REPORT OF DR. A McMURCHY.

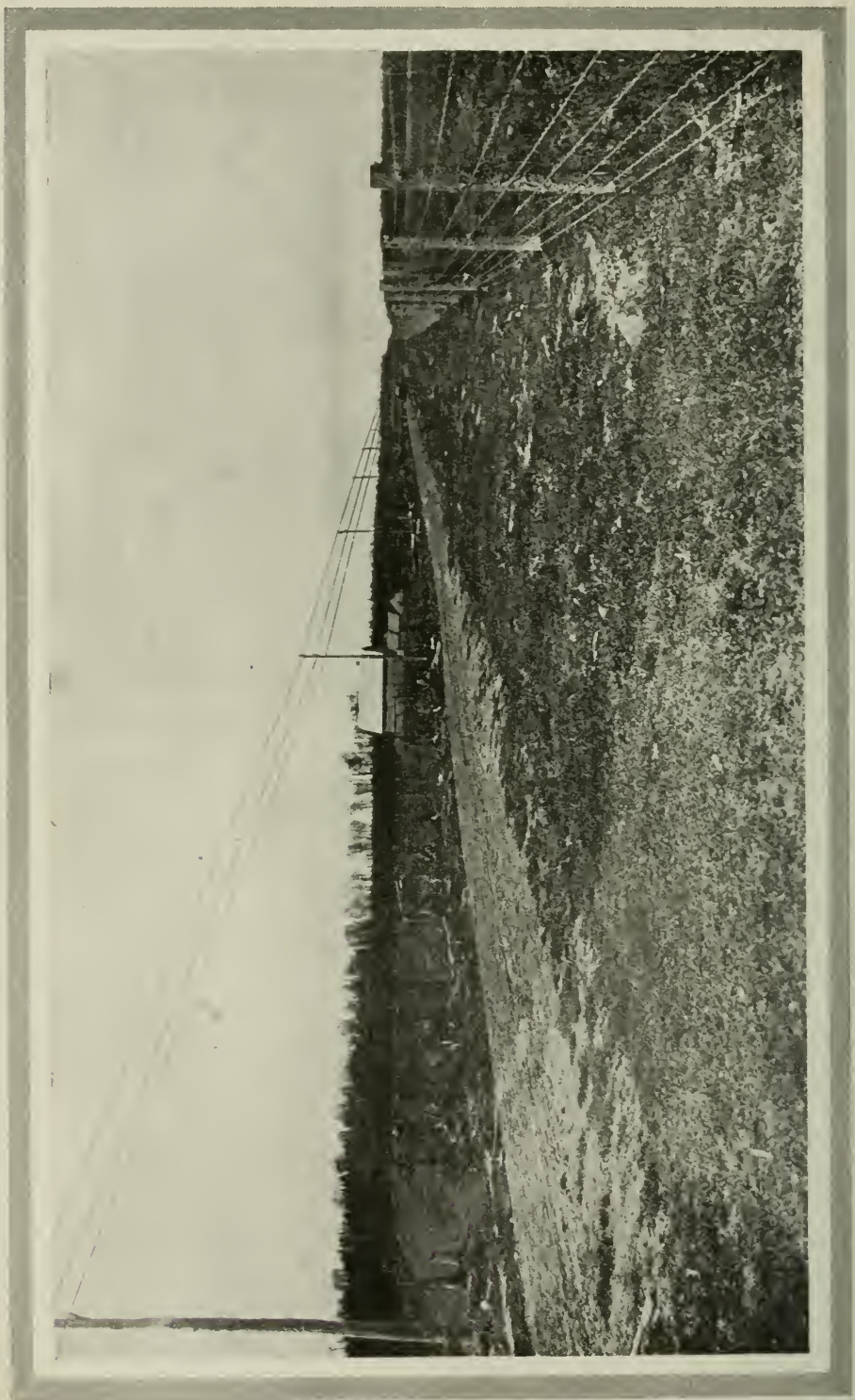
I have much pleasure in congratulating you on the careful manner in which the affairs of the railway are conducted with reference to the safety of employees. There have been few cases of injuries during the past year, and these are of a trivial nature with the exception of:

One shopman having the ends of two fingers crushed, necessitating amputation of the distal phalanges.

One carpenter caught in circular saw and received severe lacerations of scrotum and inner side of thigh.

One sectionman run over by engine and received slight fracture of skull and laceration of scalp.

All of these cases made good recoveries.



Clearing. E. Wicklam, Brentha, 1913.

REPORT OF DR. A. J. FISHER.

I herewith beg to enclose my annual medical report for the year ending October 31st, 1913:—

Month.	Consultation, Medicine and Dressings at Office.	Visits.	Surgical Operations.
November, 1912	10	38	1
December	14	12	0
January, 1913	19	20	0
February	20	10	1
March	15	4	1
April	12	5	3
May	30	18	1
June	10	3	1
July	16	9	2
August	28	33	2
September	12	15	1
October	16	4	0
Total	202	171	13

Number of visits out of town..... 38.

REPORT OF DR. R. C. LOWERY.

I present to you herewith the Annual Medical Report for my District, year ending October 31st, 1913:

(*a*) Medical—

Pneumonia	1
Scarlet Fever	2
Appendicitis	1
Typhoid Fever	1
Dysentery	2

(*b*) Surgical—

Crushed lower limbs, involving amputation	2
Scalp injuries requiring sutures	3
Injured knees	1
Injuries to a finger, including dislocation	3
Lacerated face	1
Fractured ribs with abdominal injuries	1

There were also quite a number of minor cases including Bronchitis, Dyspepsia, Pharyngitis, Muscular Rheumatism, etc., and trivial cuts and bruises which have not been tabulated in above list.

REPORT OF DR. G. V. HARCOURT.

Report of District Surgeon for Elk Lake Branch for year ending October 31st, 1913, as follows:

Calls along line	2
Calls in Elk Lake	42
Consultations in office	37
Accidents to employees	4
Deaths—wife of section foreman—typhoid fever	1
Hospital—Italian patients suffering from stomach trouble	1

REPORT OF DR. H. H. MOORE.

My report covering the sickness and accidents of the employees of the T. & N. O. Railway, on the Porcupine Branch, for the past year, is, I am glad to say, very short. We have had no serious accidents, and very few minor accidents requiring attention. The principal cases of illness were:—

(a) Case of pneumonia, child at Porquis Junction.

(b) Lumbago—Freight Conductor.

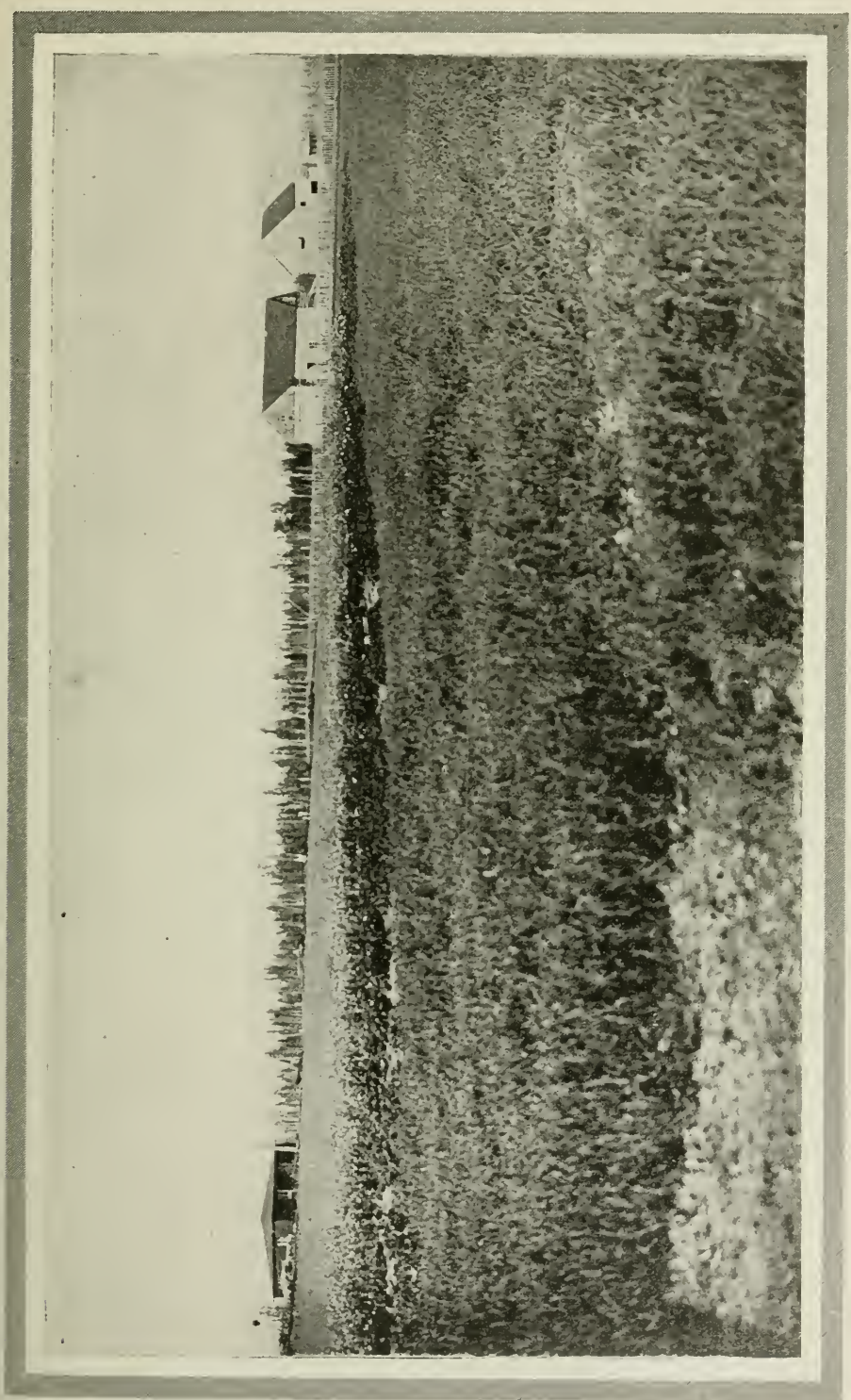
(c) Inflammation of eyes—Passenger Conductor.

There were also a number of colds and minor ailments, not necessitating leaving work.

Respectfully submitted,

W. A. Griffin,

Supt. of Traffic.



Farm of Wm. Nelson, Evanturel, 1913.

GENERAL FREIGHT AND PASSENGER DEPARTMENT

A. J. Parr, General Freight and Passenger Agent

Year Ending October 31st, 1913.

A comparison of freight tonnage and gross freight receipts for the fiscal year ending October 31st, 1913, as against 1912, shows:—

Tonnage, 1913	674,942	Freight Revenue	$906,476 16
Tonnage, 1912	562,734	Freight Revenue	929,464 66
Increase	112,208	Decrease	$22,988 50

This comparison shows that while our tonnage for 1913 increased 112,208 tons over 1912, we have a decrease of $22,988.50 in revenue.

This falling off in revenue, although we had an increase in tonnage handled, is due to the following reasons:

In order to assist the settlers, one of whose principal assets in the early stages of settlement is pulpwood and other forest products, this commodity is given the lowest possible rates.

In the year 1912 pulpwood represented 8.844 per cent. of our total tonnage, while in 1913 it represented 14.451 per cent.

Stone and sand also moves at very low rates, and this commodity increased from 1.387 per cent of total tonnage in 1912, to 2.487 per cent. in 1913.

On the other hand, steel rails, which yield a fair rate, dropped from 5.629 per cent of total tonnage in 1912, to 1.862 per cent in 1913.

It must also be remembered that, effective May 20th, 1912, all freight rates on this railway were revised and a general reduction made. This means that all freight handled from November 1st, 1911, to May 19th, 1912, was carried at the old basis, while all freight handled in the year 1913 was at the new reduced rates.

The fact, too, that in the year 1912, the average haul per ton per mile was 123.45 miles, while in 1913, it was only 113.84 miles, has a large bearing on revenue.

The total amount paid for loss and damage claims during the year was	$3,463.01
Insurance and other credits	2,222.17
Balance chargeable to loss and damage	$1,240.84

This represents .134 of 1 per cent of gross freight revenue.

Passenger traffic shows the following comparison with 1912:—

Passengers carried, 1913	508,055	Revenue	$576,049 37
Passengers carried, 1912	497,452	Revenue	599,681 73
Increase	10,603	Decrease	$23,632 36

While there is an increase in the number of passengers carried for 1913, the decrease in revenue is explained by the fact that the average revenue per passenger in 1913 was less.

OFFICE OF THE GENERAL AGENT.

Year Closing October 31st, 1913. Geo. W. Lee, General Agent.

1. For the year just closed we have many reasons to be thankful, as it has been the most promising in many respects that the districts adjacent to the Temiskaming and Northern Ontario Railway have yet seen.

2. During the year the following Crown lands were sold at the different Crown Land Agencies:

Agency.	No. of Farms.	No. of Acres.
Matheson	378	60,480
Cochrane	270	41,900
New Liskeard	155	24,800
Englehart	97	15,520
Haileybury	38	6,080
Total	938	148,780

3. During the year there were many important matters happened which mean great things for Northern Ontario. Some of them as follows:—

(*a*) An excursion to Monteith Experimental Farm, which was attended by 1,700 people, and it was a success educationally, socially, and every other way. This we hope to make an annual affair.

(*b*) The Honorable Frank Cochrane and the Honorable W. H. Hearst made a thorough and complete investigation into all matters affecting Northern Ontario. This took a full week of their time. Having charge of this trip, I feel that their visit will mean much for the rapid development of New Ontario.

(*c*) Mayor Hocken and Board of Control visited Cobalt and North to Cochrane, and feel that what they saw and the way they expressed themselves will mean much towards advertising the great northern heritage of the Province of Ontario.

(*d*) The Associated Press again visited Northern Ontario by special train and were simply amazed at what had taken place since their last visit. They all seemed to realize that Ontario is of much greater importance than the average man thinks.

4. The Falls of Abitibi are being developed and large pulp mills are in course of construction. A line of railway has been constructed down to the mills from the main line at Porquis Junction. This is one of the greatest developments that has yet taken place in Northern Ontario. It means much to the settler, it means everything to him in disposing of his pulpwood and other timbers. All rivers will be made navigable for settlers. They will also develop a large amount of electricity, some of which will be available to the nearby towns.

5. During the year a great number of roads have been constructed, and one only has to ride over the line on the train to see the wonderful advancement that is being made along these lines.

6. The exhibitions at Charlton, Englehart, and New Liskeard were a marvel to all visitors who had the good fortune to be present at them, and they will continue to grow each year.

7. During the year if any complaint came from any settler or settlement, it was at once investigated, and assistance given, in every possible way to help them out of their difficulties. New and intending settlers in many cases were met and all matters pertaining to the country were carefully explained to them, and in a great many cases they were assisted in locating farms and helped out in other ways. We took care of all who seemed to require help and information of any kind.

8. Speaking in a general way, there is evidence of prosperity on every hand, from North Bay to Cochrane, and each of the towns has made marked progress during the year just ended, as follows:—

(*a*) Commencing at Haileybury, the Southern end of the clay belt, evidence of work being done on every hand and clearings are most noticeable all through Bucke Township.

(*b*) At New Liskeard one can see for miles in many different directions, which is good proof of the advancement being made. Many bank barns can be seen in a distance and one would commence to imagine himself down in the County of York.

(*c*) My remarks in paragraph "B" will supply to townships of Dymond, Hudson, Harley, Armstrong, Evanturel, Dack, Armstrong, Kerns, Henwood, Harris, Casey, Brethour, Pense and Ingram.

(*d*) The Building and completion of the Elk Lake Branch is responsible for the improvements and good showings along the line, in the townships of Cane, Bryce, Beauchamp, and Tudhope.

(*e*) Englehart has again risen from the effects of the fire last spring, and will be bigger and better than ever. The development in the townships around is bound to make the town, and clearings, buildings and other improvements are noticeable in the townships of Marter, Chamberlain, Savard, Catherine, Pacaud, and Marquis.

(*f*) Around Charlton, my remarks regarding the country around Englehart hold good here. In the townships of Robillard, Truax, and Sharpe, the people are making a good showing, and the Fair at Charlton this year was a proof of the advancement being made by the people.

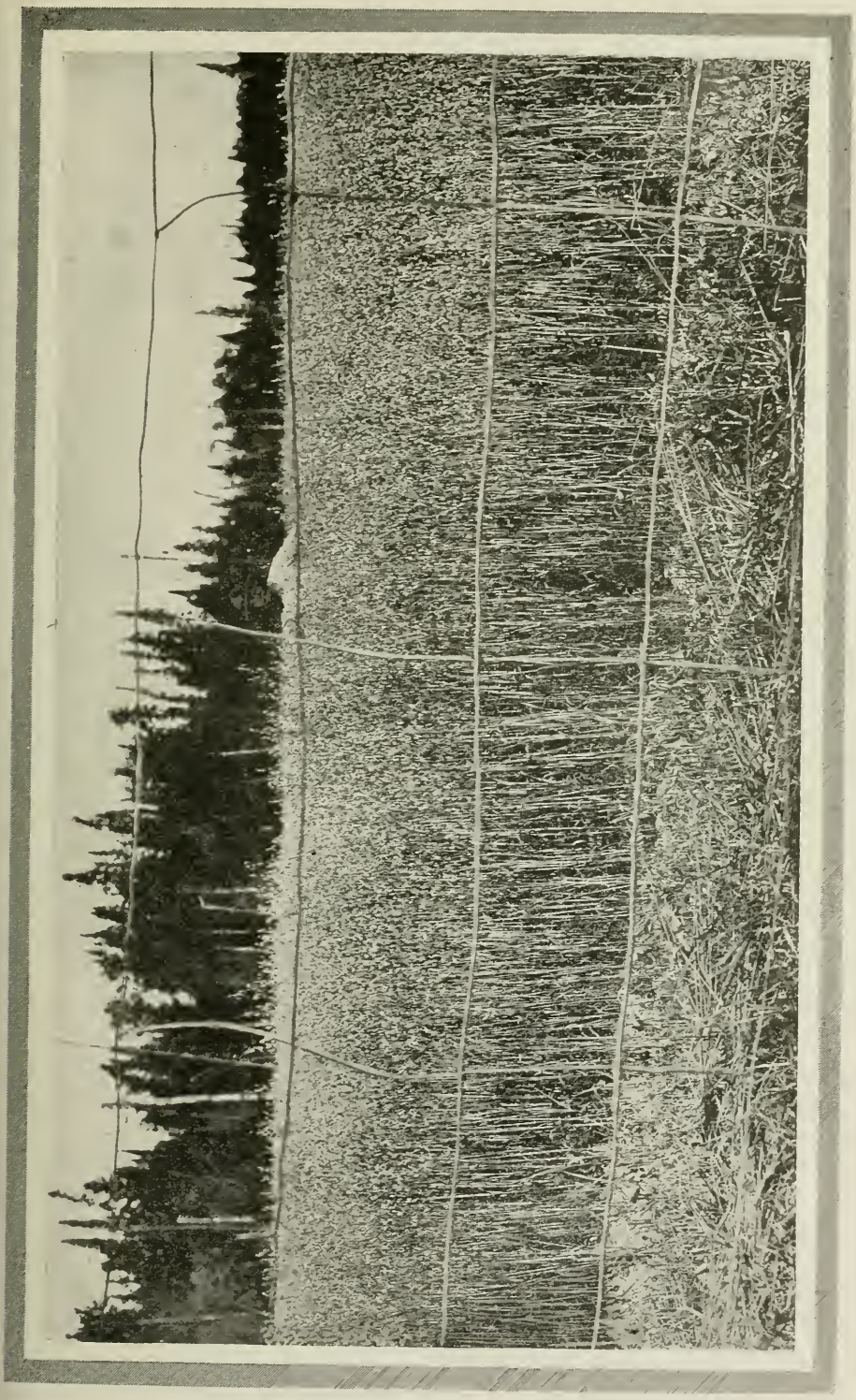
(*g*) Around Sesekinika the settlers are making a fairly good showing with their clearing and buildings.

(*h*) The Matheson country has made great advancement, and it will be noted that more land was taken up in this Agency than any of the others. A very noticeable improvement is being made along through this section, in the townships of Playfair, Bowman, Carr, Currie, Taylor, Walker, Clergue, and Calvert, and in the next few years it will be one of the best sections on the People's Railway.

(*i*) Considerable development is being done in townships along Porcupine Branch, Dundonald, German, Matheson, Hoyle and Whitney.

(*j*) Around Cochrane a most noticeable development has taken place in the townships of Lamarche, Glackmeyer, Clute, Brower, and Calder. The year just closing has seen more improvements than the two previous years.

9. All along the railway there is evidence of prosperity on every hand and a well satisfied and contented lot of people. A visit to the Fall Fairs at Charlton, Englehart, New Liskeard, and Haileybury will at once convince any person that the people are a well-to-do, thrifty, good-looking, intelligent race, and one cannot help but think that the future of Greater Ontario is assured.



Farm of Wm. Hackford, Chamberlain, 1913.

Preliminary Report on the Mining Industry in that part of Northern Ontario served by the Temiskaming and Northern Ontario Railway, Calendar year 1913

By ARTHUR A. COLE, Mining Engineer.

Gold.

Porcupine.

The Porcupine District in the face of many obstacles is now making itself felt in the mineral output of Ontario as an important gold producer. During the first six months of the year labor troubles not only curtailed production but greatly impeded development work, but since the strike ended conditions have gradually improved and the year closes with conditions normal.

The production of the district is shown in the following table.

Year.	Ore Treated.	Gold Bullion.	Value.
1910	1,060 tons	1,947 ozs.	$35,539
1911	707 "	851 "	17,187
1912	.....	83,726 "	1,730,628
1913 Estimated	.....	212,869 "	4,400,000
		299,393 "	6,183,354

The year 1913 thus shows an increase of $2,669,372 or 154%, over 1912, and nearly equals the total previous production for the whole of Ontario ($4,734,713)

The producing mines were:—

1. Dome.
2. Hollinger.
3. McIntyre.
4. Porcupine Crown.

Dome.

The Dome mill is now treating between 12,000 and 13,000 tons of ore per month, of an average value of about $9.00. Forty additional stamps are now being installed bringing the total up to 80 stamps, which along with additional tube mills, etc. will bring the capacity of the mill up to 1,000 tons daily. The additions are expected to be completed by June, 1914.

The main shaft has been sunk to the 5th or 450-foot level and while the 3rd, 4th, and 5th levels are being developed the ore is drawn from the second level from the open pits or "Glory Hole."

Hollinger.

By the 1st January, 1914, it is expected to reach the 550-foot level. The lower levels are reached by winzes, but the main shaft is being sunk to connect with these lower levels. Over a mile of development has been accomplished during the year. Forty machines are now working underground (19 on development) and more will be added as soon as additional power is available.

In the mill a stamp duty of 12 tons per stamp per 24 hours is maintained, which gives a total of 480 tons milled daily. This will be increased by next spring by the addition of 20 more stamps. The value of the ore treated varies from month to month, but the lowest monthly average yet reached was $15.07 per ton. The approximate extraction on this ore was 96.1%, with a milling cost of $1.41 per ton. The lowest total cost attained was in November, when it amounted to $5.05 per ton. It should, however, be remembered that this cost includes all development, shaft sinking, timbering and other dead work.

The profits from January 1st to November 4th, 1913, amounted to $1.395,773, out of which was paid eleven 3% dividends, amounting to $990,000. The surplus carried forward from the 4th November was $757,574.

McIntyre.

The new cyanide mill of the McIntyre Company started operations early in March, but was closed down some time on account of the strike. It is now operating at full capacity, but additions and alterations now under way are expected to increase both efficiency and capacity.

Porcupine Crown.

Crosscutting is proceeding on the 500-foot level (the deepest level in the mine) to locate the vein. Development has extended the known boundaries of the ore bodies on all the other levels.

The new cyanide mill with the addition of a second 10 stamp unit has been put into successful operation and is now treating 125 tons daily. Continuous decantation, doing away with the use of filters, is a feature of this mill.

Several other properties in the district have installed small mills, but these can only be considered as test mills until proven ore bodies can furnish a steady supply. A leasing company has reopened the Rea Mine, after a long close down, and now shows a small production for the year from the company's 5-stamp mill.

Kirkland Lake.

This district, which is situated about six miles east of Swastika, has a number of promising prospects. The most noteworthy is known as the

Tough Oakes.

Several cars were shipped from this property and ran from $400.00 to $600.00 gold per ton with sufficient silver to pay for transportation and treatment charges. The high grade ore is hand picked, sacked and shipped to the smelter. A five-stamp mill is treating daily, by simply amalgamation, 12 tons of ore valued at $30.00 per ton. A new mill is being designed as the present mill does not give an economical extraction. The property is being opened up by a shaft with developments on the 100 and 200-foot levels.

The 10-stamp mill of the *Swastika Mining Company* at Swastika was operated early in the year giving a small production, but now is closed down.

The only mill operating in the Larder Lake district is the *Goldfields, Limited.*

Silver.

Cobalt.

The silver production from the Cobalt District for 1912, including in this the Gowganda and South Lorrain districts, amounted to 30,243,859 ounces, valued at $17,390,218. It is estimated that the 1913 production will show an increase of about 250,000 ounces over the above figures, but with the average price of silver for the year one cent less, the value of the output will practically be the same.

The Cobalt District proper has 20 shipping mines of which 14 paid dividends during the year. The Drummond Mine, which was formerly operated as a private corporation, changed hands and has since become a dividend payer under the name of the Caribou Cobalt.

Development of the mines at Cobalt has been along normal lines.

Permission was granted to the Kerr Lake and Crown Reserve Mining Companies to drain Kerr Lake. Large electric pumps were installed and the water, with much mud, was pumped over a rise of ground and discharged into Giroux Lake. This work has already resulted in the uncovering of several valuable veins in the old lake bottom. Permission is now being asked to similarly drain Cobalt Lake.

The Northern Customs Concentrators, Limited, having sold their mill at the south end of Cobalt Lake to the Cobalt Townsite Mining Company, have built and are now operating a new mill of 80 stamp capacity at mileage 104. The Nipissing Low Grade Ore Mill is now handling 260 tons of low grade ore per 24 hours. In this mill the ore is slimed and cyanided and shows several departures from the usual practice of the district.

The high grade mills of the Nipissing and Buffalo mines are turning out high grade silver bullion, and these two companies are now independent of the smelters. The Nipissing Company has been shipping the residues of the high grade mill to England for the cobalt and nickel contents.

The market for cobalt oxide has been gradually expanding and the price showed an advance towards the end of the year.

In the silver districts outside of Cobalt proper the *Casey Mine* of Casey Township, 17 miles north of Cobalt, continues to hold the lead. At Gowganda the *Miller Lake-O'Brien* is a steady shipper and developments on this and the adjoining property, have been very encouraging. In South Lorrain the *Wettlaufer* continued to ship, while the *Keeley* was reopened by a new company and several promising ore bodies located.

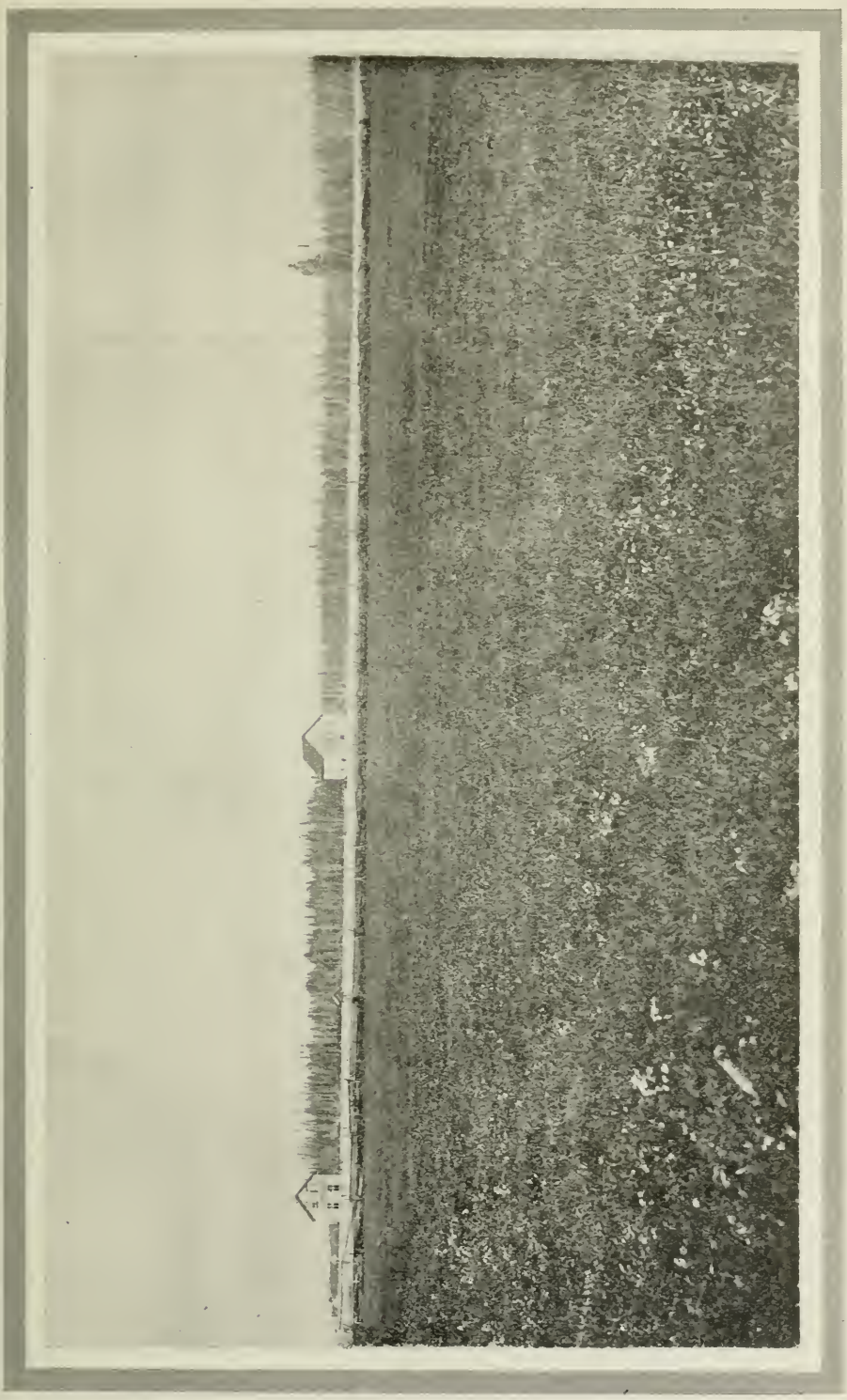
Nickel.

The Alexo Mine continues to be the only operating nickel property in the district. The ore is extracted by opencut work and is all shipped to the Mond Nickel Company's smelter at Coniston.

The shipments for the year 1913. to the 30th November, amounted to 3,782 tons.

Copper.

The Dane Mining Company continued operations during the year, and in March shipped 86.65 tons of copper ore to the United States.



Farm of A. La Cort, Brentha, 1913.

FINANCIAL STATEMENTS

GENERAL BALANCE SHEET.

ASSETS.

Property Owned :—		
Cost of Road to Oct. 31, '12	$16,535,394 50	
Cost of Road to Oct. 31, '13	837,724 25	
		$17,373,118 75
Cost of Equipment to Oct. 31, '12	1,991,485 03	
Cost of Equipment to Oct. 31, '13	12,137 46	
		2,003,622 49
Working Assets :—		
Cash	133 801 50	
Accounts Collectible	377,755 95	
Agents and Conductors	16,044 54	
Material and Supplies	372,335 47	
		899,937 46
Deferred Debit Items :—		
Paymaster's Advance	7,000 00	
Treasurer's Advance	50 00	
Insurance Paid in Advance	12,173 49	
Accounts in Suspense	14,730 01	
		33,953 50
Land Agent		59,155 56
Nipissing Central Railway Company		235,483 81
Nipissing Central Railway Company Advance		98,323 21
		$20,703,594 78

LIABILITIES.

Debit :—		
Provincial Loan Account		$19,696,451 99
Working Liabilities :—		
Accounts Payable, Inc. Pay Rolls	$541,831 25	
Car Mileage and Per Diem Balance	9,710 50	
Foreign Tickets	5,598 29	
Foreign Freight	12,684 07	
Unclaimed Wages	6,246 72	
Deposit on Sidings	782 24	
Operating Reserves for Equipment	77,498 16	
Stock in Transit	1871 34	
		656,222 57
Free Surplus :—		
Profit and Loss—Balance		350,920 22
		$20,703,594 78

PROFIT AND LOSS.

Paid Treasurer of Ontario		$250,000 00
Balance Carried Forward		350,920 22
		$600,920 22
By Balance, October 31st, 1912		$338,286 03
By Townsites		7,310 47
By Revenue		255,323 72
		$600,920 22

Comparative Statement, Fiscal Years 1912-1913

EARNINGS AND EXPENDITURES.

	1912.	1913.
Revenue from Transportation:		
1. Freight revenue	$929,464 66	$906,476 16
2. Passenger revenue	599,681 73	576,049 37
3. Excess baggage revenue	7,129 95	7,014 31
4. Parlor and chair car revenue	1,593 35	1,771 30
5. Mail revenue	20,229 29	20,129 85
6. Express revenue	47,010 31	42,170 54
7. Milk revenue (passenger train)	612 03	366 74
8. Other passenger train revenue	.....	.....
9. Switching revenue	10,082 97	6,096 47
10. Special service train revenue	2,731 15	7,153 69
11. Miscellaneous transportation revenue	.....	.....
Total	$1,618,535 44	$1,567,228 43
Revenue from Operation other than Transportation:		
12. Station and train privileges	3,996 32	3,949 92
14. Storage—Freight	831 73	900 05
15. Storage—Baggage	1,064 25	786 00
16. Car service—Demurrage	10,898 15	12,766 45
17. Telegraph and telephone	31,279 56	32,545 73
18. Rent of buildings and other property	36,188 32	37,409 33
19. Miscellaneous	4,656 30	568 94
Total	$88,914 63	$88,926 42
Total Revenue	$1,707,450 07	$1,656,154 85
Expenditures:		
1. Maintenance of ways and structures	346,964 01	430,820 04
2. Maintenance of equipment	249,683 22	242,633 93
3. Traffic expenses	17,461 22	16,857 36
4. Transportation expenses	676,963 33	680,480 08
5. General expenses	93,625 91	106,758 60
Total Operating Expenses	$1,384,697 69	$1,477,550 01
Balance	322,752 38	178,604 84
Other Income:		
Ore royalties	135,500 31	81,421 20
Equipment rental	10,825 37	4,953 46
Outside operations	.....	3,671 52
	$469,078 06	$268,651 02
Deductions from Income:		
Hire of equipment	11,480 53	10,671 24
Outside operations	3,395 79	2,656 06
Net Results	$454,201 74	$255,323 72

STATEMENT SHOWING AMOUNT EXPENDED ON CONSTRUCTION IROQUOIS FALLS BRANCH.

Year Ended October 31st, 1913.

Engineering	$2,503 41
Right of way and station grounds	1,548 10
Grading	22,947 62
Bridges, trestles and culverts	2,357 36
Ties	7,762 00
Rails	4,973 56
Frogs and switches	3,106 45
Track fastenings and other material	8,837 30
Ballast	14,955 54
Track-laying and surfacing	16,682 11
Roadway tools	102 50
Fencing right of way	2,574 52
Crossings and signs	78 00
Telegraph and telephone lines	2,075 73
Station buildings and fixtures	660 30
Law expenses	39 80
Stationery and printing	3 78
Total Iroquois Falls Branch	$91,208 08

STATEMENT SHOWING AMOUNT EXPENDED ON CONSTRUCTION OF PORCUPINE BRANCH.

Year Ended October 31st, 1913.

Engineering	$2,705 81
Right of way and station grounds	196 30
Grading	2,717 20
Sidings	6,531 39
Bridges, trestles and culverts	9,910 25
Ties	282 56
Rails	9,713 40
Frogs and switches	*930 53
Track fastenings and other material	1,146 94
Ballast	15,456 68
Tracklaying and surfacing	8,029 54
Roadway tools	24 63
Fencing right of way	1,710 13
Crossings and signs	204 68
Telegraph and telephone lines	6,630 80
Station buildings and fixtures	1,410 04
Shops, engine houses and turntables	*2,475 88
Water stations	2,399 12
Fuel stations	87
Stationery and printing	*47 10
Insurance	*1,132 95
Other expenditure	14 02
Total Porcupine Branch	$64,497 90

*Cr.

AMOUNT EXPENDED ON ELK LAKE SURVEY AND BRANCH

Year Ended October 31st, 1913.

Engineering expenses	$5,027 72
Right of way and station grounds	2,358 22
Grading	36,471 51
Bridges, trestles and culverts	82,851 77
Ties	22,562 98
Rails	40,024 61
Frogs and switches	568 22
Track fastenings and other material	2,189 50
Ballast	49,439 92
Track-laying and surfacing	35,874 43
Roadway tools	1,477 70
Fencing right of way	7,810 02
Crossings and signs	5,457 20
Telegraph and telephone lines	10,382 81
Station buildings and fixtures	15,522 33
Shops, engine houses and turntables	1,242 46
Water stations	5,092 58
Earnings and operating expenses during construction	*456 16
Law expenses	39 60
Stationery and printing	1 50
Insurance	*400 00
Other expenditure	18 60
Total Elk Lake Survey and Branch	$323,557 52

*Cr.

STATEMENT SHOWING AMOUNT EXPENDED ON ADDITIONS AND BETTERMENTS

Year Ended October 31st, 1913.

Right of way and station grounds	$8,349 01
Real estate	*10 00
Widening cuts and fills	25,324 67
Protection of banks	7,699 51
Grade revisions and changes of line	53 31
Bridges, trestles and culverts	39,064 41
Improved frogs and switches	2,817 46
Track fastenings and other material	12,830 11
Ballast	*166 69
Additional main tracks	*913 18
Sidings and spur tracks	45,675 74
Terminal yards	3,100 37
Fencing right of way	4,505 70
Improvement of grade crossings	80
Interlocking apparatus	45 88
Telegraph and telephone lines	8,469 18
Station buildings and fixtures	22,109 16
Shops, engine houses and turntables	8,068 54
Water and fuel stations	8,102 58
Snow and sand fences and snowsheds	1,305 70
Miscellaneous structures	1,043 97
Equipment	*129 41
Roadway joint terminals	40 57
Taxes	24 54
Total Additions and Betterments	$197,412 02

*Cr.

STATEMENT SHOWING AMOUNT EXPENDED ON CONSTRUCTION OF MAIN LINE

Year Ended October 31st, 1913.

Engineering	$17,982 30
Right of way and station grounds	2,180 06
Real estate	1,865 44
Grading	59,580 66
Bridges, trestles and culverts	1,789 85
Ties	3,177 94
Rails	44,363 77
Frogs and switches	1,351 22
Track fastenings and other material	5,543 50
Ballast	7,491 34
Track-laying and surfacing	5,951 80
Roadway tools	*9 76
Fencing right of way	16 88
Crossings and signs	25 76
Telegraph and telephone lines	8,003 04
Station buildings and fixtures	1,632 84
Water stations	*2 00
Fuel stations	920 39
Law expenses	1,500 00
Stationery and printing	1 50
Insurance	*2,317 80
	$161,048 73

*Cr.

SUMMARY.

Expended on construction 1913	$640,312 23
Expended on equipment 1913	12,137 46
Expended on additions and betterments 1913	197,412 02
	$849,861 71

Comparative Statement, Expenses, Fiscal Years 1912—1913.

MAINTENANCE OF WAY AND STRUCTURES.

——	1912 From Nov. 1, 1911, to Oct. 31, 1912	1913 From Nov. 1, 1912, to Oct. 31, 1913.
	$	$
November	22,821 12	31,974 98
December	20,619 41	26,909 35
January	23,537 65	26,065 84
February	20,909 69	18,841 55
March	21,398 65	23,285 60
April	22,788 35	26,798 41
May	37,943 57	35,898 83
June	33,313 04	39,698 28
July	31,631 48	42,712 02
August	37,333 97	48,397 22
September	37,237 61	52,693 23
October	37,429 47	57,544 73
	$346,964 01	$430,820 04

Accounts.	1912 From Nov. 1, 1911, to Oct. 31, 1912.	1913 From Nov. 1, 1912, to Oct. 31, 1913.
	$	$
Superintendence	23,386 40	25,819 43
Ballast	10,968 86	9,787 47
Ties	33,607 64	47,845 96
Rails	5,937 36	23,663 64
Track materials	5,851 83	6,737 34
Roadway and track	179,742 17	202,842 15
Removal snow, sand, etc	23,300 74	24,940 30
Bridges, trestles and culverts	13,764 15	33,109 31
Under grade crossing	20 32	152 09
Grade crossings, fences	4,788 21	5,178 65
Snow and sand fences	.....	.....
Signals and interlocking plants	66 92	70 54
Telegraph and telephone lines	9,705 72	8,704 87
Electric power transmission	.....	.....
Buildings, fixtures and grounds	33,961 65	44,009 64
Roadway tools and supplies	7,403 46	6,117 45
Injuries to persons	656 00	115 00
Stationery and printing	610 46	1,059 70
Other expenses	.....	.....
Maintaining joint tracks, yards and facilities, Dr	.....	.....
Maintaining joint tracks, yards and facilities, Cr	6,807 88	9,333 50
	$346,964 01	$430,820 04

Comparative Statement, Expenses, Fiscal Years 1912—1913.

MAINTENANCE OF EQUIPMENT.

——	1912 From Nov. 1, 1911, to Oct. 31, 1912.	1913 From Nov. 1, 1912, to Oct. 31. 1913.	Accounts.	1912 From Nov. 1, 1911, to Oct. 31, 1912.	1913 From Nov. 1, 1912, to Oct. 31, 1913.
	$ c.	$ c.		$ c.	$ c.
November	22,673 40	19,928 56	Superintendence	12,358 68	6,439 18
December	21,475 88	23,668 43	Steam locomotives, repairs	98,606 88	88,365 12
January	25,200 24	23,032 35	Steam locomotives, renewals	.....	.....
February	19,396 38	20,760 23	Steam locomotives, depreciation	13,266 96	14,995 56
March	23,246 52	23,496 84	Passenger train cars, repairs	41,311 36	56,186 06
April	24,183 12	26,271 90	Passenger train cars, renewals	.....	Cr. 9 85
May	22,511 91	20,350 41	Passenger train cars, depreciation	11,009 57	8,956 80
June	18,814 51	19,437 99	Freight cars, repairs	39,791 46	24,597 23
July	18,489 97	18,945 22	Freight cars, renewals	Cr. 1,812 50	.....
August	18,144 85	17,612 11	Freight cars, depreciation	12,537 60	12,889 92
September	16,780 78	17,181 13	Work equipment, repairs	12,457 95	17,607 85
October	18,765 66	11,948 76	Work equipment, renewals	Cr. 54 78	Cr. 33 00
			Work equipment, depreciation	2,987 52	2,987 52
			Shop machinery and tools	4,762 73	7,109 96
			Injuries to persons	96 17	141 81
			Stationery and printing	979 98	929 34
			Other expenses	1,383 64	1,470 43
	249,683 22	242,633 93		249,683 22	242,633 93

Comparative Statement, Expenses, Fiscal years 1912—1913

TRAFFIC EXPENSES

Month.	1912 From Nov. 1, 1911 to Oct. 31, 1912	1913 From Nov. 1, 1912 to Oct. 31, 1913	Accounts	1912 From Nov. 1, 1911 to Oct. 31, 1912	1913 From Nov. 1, 1912 to Oct. 31, 1913
November	$1,151 49	$1,314 70	Superintendence	$9,579 62	$9,864 54
December	1,320 04	1,242 08	Outside Agents	487 34	133 16
January	1,285 43	1,431 96	Advertising	3,625 24	2,665 26
February	1,573 32	1,290 73	Traffic Associations	15 00	81 15
March	1,705 91	1,730 74	Industrial and Immigration Bureaus	1,972 25	1,771 25
April	1,355 18	1,836 80	Stationery and Printing	1,781 77	2,342 00
May	1,205 55	1,279 70			
June	1,118 81	1,441 46			
July	1,765 83	1,505 54			
August	1,791 12	1,524 82			
September	2,086 54	1,150 92			
October	1,102 00	1,107 91			
	$17,461 22	$16,857 36		$17,461 22	$16,857.36

Comparative Statement, Expenses, Fiscal Years 1912 and 1913.

TRANSPORTATION EXPENSES.

Month.	1912 From Nov. 1, 1911 to Oct. 31, 1912	1913 From Nov. 1, 1912 to Oct. 31, 1913	Accounts.	1912 From Nov. 1, 1911 to Oct. 31, 1912	1913 From Nov. 1, 1912 to Oct. 31, 1913
	$ c.	$ c.		$ c.	$ c.
Nov.	59,306 23	56,492 17	Superintendence	10,328 86	11,978 05
Dec.	67,326 02	59,592 83	Dispatching trains	12,125 82	13,942 29
Jan.	64,432 47	59,903 01	Station employees	113,820 41	120,228 02
Feb.	56,609 09	57,969 66	Car service association	277 86	404 57
March	62,683 28	65,448 22	Coal and ore docks, Cr	829 02	.....
April	51,472 42	58,881 81	Station supplies and expenses	14,792 14	13,258 83
May	54,005 66	53,788 53	Yardmasters and their clerks	11,519 77	12,149 28
June	50,848 91	51,971 40	Yard conductors and brakemen	35,764 17	32,531 20
July	50,462 29	49,020 86	Yard switch and signal tenders	1,977 27	1,245 07
Aug.	53,884 72	52,555 90	Yard supplies and expenses	798 72	782 55
Sept.	51,880 06	51,843 67	Yard enginemen	20,123 48	18,193 34
Oct.	54,052 18	63,012 02	Yard enginehouse expenses	7,147 38	6,482 20
			Yard locomotives, fuel	36,741 52	37,082 83
			Yard locomotives, water	873 46	1,091 06
			Yard locomotives, lubricants	717 74	604 49
			Yard locomotives, supplies	270 81	354 39
			Operating joint yards and terminals, Dr	16,519 57	7,058 75
			Operating joint yards and terminals, Cr	68,554 73	69,253 67
			Road enginemen	67,803 69	70,867 09
			Road enginehouse expenses	33,052 99	41,515 36
			Road locomotives, fuel	204,242 47	222,774 37
			Road locomotives, water	17,884 13	15,901 34
			Road locomotives, lubricants	3,930 29	3,213 51
			Road locomotives, supplies	1,196 08	1,450 65
			Road trainmen	78,142 12	80,678 91
			Train supplies, expenses	28,742 14	20,160 87
			Clearing wrecks	5,007 56	1,328 31
			Telegraph and telephone operation	2,319 27	2,496 10
			Stationery and printing	12,012 26	8,505 90
			Other expenses	365 33	659 60
			Loss and damage, freight	2,628 10	2,301 37
			Loss and damage, baggage	22 50	45 22Cr.
			Damage to property	4 00	.....
			Damage to stock on Right of Way	942 72	276 70
			Injuries to persons	4,252 45	261 97
	676,963 33	680,480 08		676,963 33	680,480 08

Comparative Statement, Expenses, Fiscal years 1912 and 1913.

GENERAL EXPENSES.

Month.	1912	1913	Accounts.	1912	1913
	From Nov. 1, 1911, to Oct. 31, 1912	From Nov. 1, 1912, to Oct. 31, 1913.		From Nov. 1, 1911, to Oct. 31, 1912.	From Nov. 1, 1912, to Oct. 31, 1913.
	$ c.	$ c.		$ c.	$ c.
November	8,034 33	9,606 32	Salaries and expenses of general officers	17,695 66	19,174 09
December	7,044 64	7,536 08	Salaries and expenses of clerks and attendants	32,849 85	35,225 08
January	8,939 17	10,126 89	General office supplies and expenses	5,179 03	4,721 94
February	7,789 43	8,753 36	Law expenses	10,445 93	14,361 33
March	6,918 76	8,521 15	Insurance	23,807 39	39,071 90
April	7,938 55	10,167 15	Stationery and printing	3,174 42	2,893 36
May	7,923 61	7,657 32	Other expenses	695 40	1,595 82
June	6,701 93	8,586 96	General administration of joint tracks, yards and terminals, Dr		
July	7,323 30	8,526 14			
August	8,122 46	9,885 67	General administration of joint tracks, yards and terminals, Cr	Cr. 221 77	284 92
September	7,332 06	9,500 37			
October	9,557 67	7,891 19			
	93,625 91	106,758 60		93,625 91	106,758 60

COMPARATIVE STATEMENT SHOWING EARNINGS AND EXPENDITURES IN OPERATION

FROM 1905 TO 1913, INCLUSIVE.

Year.	Freight.	Passenger.	Other Revenue.	Maintenance of Ways and Structures.	Maintenance of Equipment.	Traffic Expenses.	Transportation Expenses.	General Expenses.	Total Revenue.	Total Expenditure.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1905.....	121,530 46	108,681 76	23,508 33	25,072 89	12,533 68	.....	88,342 41	13,823 52	253,720 55	139,772 50
1906.....	230,552 63	254,759 33	58,706 89	77,265 87	46,382 65	.....	215,256 08	23,587 98	544,018 85	362,492 58
1907.....	390,894 29	388,343 03	74,282 69	112,395 22	88,016 79	.....	412,160 52	32,839 76	853,520 01	645,412 29
1908.....	471,203 41	366,504 53	135,357 67	125,563 43	119,563 01	9,789 99	405,907 58	24,863 45	973,065 61	688,397 43
1909 (10 mos.)	756,141 66	483,110 89	121,972 32	191,170 18	107,078 96	14,920 04	436,768 41	49,989 34	1,361,224 87	794,796 88
1910.....	852,886 46	606,967 91	131,997 65	380,314 75	137,340 46	17,705 31	556,740 45	76,045 66	1,591,852 02	1,165,361 36
1911.....	974,678 33	653,063 01	153,223 49	353,918 92	164,145 69	17,461 22	567,316 97	78,911 74	1,780,964 83	1,181,998 63
1912.....	929,464 66	599,681 73	178,303 68	346,964 01	249,683 22	12,499 96	676,963 33	93,625 91	1,707,450 07	1,384,697 69
1913.....	906,476 16	576,049 37	173,629 32	430,820 04	242,633 93	16,857 36	680,480 08	106,758 60	1,656,154 85	1,477,550 01
	5,633,823 06	4,037,161 56	1,050,982 04	2,043,485 31	1,167,378 39	89,233 88	4,039,935 83	500,445 96	10,721,971 66	7,840,479 37

SUMMARY

Freight Revenue	$5,633,828 06	Maintenance of Ways and Structures	$2,043,485 31
Passenger Revenue	4,037,161 56	Maintenance of Equipment	1,167,378 39
Other Revenue	1,050,982 04	Transportation Expenses	4,039,935 83
		Traffic Expenses	89,233 88
		General Expenses	500,445 96
Total Revenue	$10,721,971 66	Total Expenditure	$7,840,479 37

Total Revenue from Transportation		$10,721,971 66
Total Expenditure		7,840,479 37
		2,881,492 29
Earnings—Ore Royalties, etc		557,673 09
		3,439,165 38
Paid Treasurer of Ontario		3,088,245 16
Balance at Profit and Loss		350,920 22

Comparative Statement of Earnings and Expenses

TEMISKAMING AND NORTHERN

No.	RECEIPTS.	Per Cent.	1911 November.	Per Cent.	1912 November.
	I. Revenue from transportation:		$ c.		$ c.
1	Freight revenue	.....	94,835 09	.....	76,345 39
2	Passenger revenue	.....	56,654 41	.....	46,674 69
3	Excess baggage revenue	.....	674 94	.....	568 54
4	Parlor and chair car revenue	.....	86 35	.....	116 15
5	Mail revenue	.....	1,412 32	.....	1,732 43
6	Express revenue	.....	4,971 66	.....	3,558 51
7	Milk revenue (on passenger trains)	.....	28 66	.....	31 56
8	Other passenger train revenue	.....	.....	.....	.....
9	Switching revenue	.....	907 02	.....	1,028 37
10	Special service train revenue	.....	.....	.....	153 55
11	Miscellaneous transportation revenue	.....	.....	.....	.....
	Totals	.....	159,570 45	.....	130,209 19
	II. Revenue from operations other than transportation:—				
12	Station and train privileges	.....	332 06	.....	329 16
13	Parcel room receipts	.....	.....	.....	.....
14	Storage—freight	.....	43 16	.....	53 08
15	Storage—baggage	.....	109 20	.....	73 80
16	Car service demurrage	.....	1,400 00	.....	1,567 25
17	Telegraph and telephone	.....	3,146 85	.....	2,512 93
18	Rents of buildings and other property	.....	2,131 60	.....	606 36
19	Miscellaneous	.....	2,749 23	.....	.....
	Totals	.....	9,912 10	.....	5,142 58
	Total revenue	.....	169,482 55	.....	135,351 77
	EXPENDITURES.				
i.	Maintenance of way and structures	13.5	22,821 12	23.6	31,974 98
ii.	Maintenance of equipment	13.4	22,673 40	14.7	19,928 56
iii.	Traffic expenses	.7	1,151 49	.9	1,314 70
iv.	Transportation expenses	35.	59,306 23	41.8	56,492 17
v.	General expenses	4.7	8,034 33	7.1	9,606 32
	Total operating expenses	67.3	113,986 57	88.1	119,316 73
	Balance	.....	55,495 98	.....	16,035 04
	Other Income:				
	Ore royalties	.....	.....	.....	9,758 27
	Hire of equipment	.....	.....	.....	699 07
	Outside operations	.....	.....	.....	.....
	Totals	.....	55,495 98	.....	26,492 38
	Deductions from Income:				
	Hire of equipment	.....	3,038 61	.....	.....
	Outside operations	.....	304 71	.....	.....
	Net result	.....	52,152 66	.....	26,492 38

by Months, November, 1911, to October, 1913.

ONTARIO RAILWAY.

Per Cent.	1911 December,	Per Cent.	1912 December.	Per Cent.	1912 January	Per Cent.	1913 January.	No.
	$ c.		$ c.		$ c.		$ c,	
.....	110,105 28	.....	75,025 79	.....	87,500 99	.....	81,616 71	1
.....	58,764 61	.....	44,583 94	.....	40,204 37	.....	33,841 93	2
.....	435 73	.....	426 67	.....	504 58	.....	529 65	3
.....	85 95	.....	129 45	.....	106 50	.....	99 75	4
.....	1,464 12	.....	1,732 42	.....	1,710 07	.....	1,789 36	5
.....	4,716 20	.....	3,438 81	.....	4,513 41	.....	2,963 49	6
.....	44 15	.....	66 26	.....	79 80	.....	54 91	7
.....	.....	.....	.....	.....	.....	.....	.....	8
.....	1,639 70	.....	481 44	.....	1,125 59	.....	1,078 21	9
.....	.....	.....	3,834 55	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	177,255 74	.....	129,719 33	.....	135,745 31	.....	121,974 01	
.....	245 82	.....	329 16	.....	280 26	.....	329 16	12
.....	.....	.....	.....	.....	.....	.....	.....	13
.....	58 48	.....	41 10	.....	44 63	.....	62 47	14
.....	73 55	.....	63 20	.....	80 40	.....	46 35	15
.....	771 00	.....	2,016 00	.....	828 00	.....	2,347 05	16
.....	3,146 46	.....	2,304 71	.....	2,652 36	.....	2,233 09	17
.....	2,628 25	.....	888 39	.....	2,767 51	.....	4,761 06	18
.....	50 10	.....	119 88	.....	12 27	.....	7 31	
.....	6,973 66	.....	5,762 44	.....	6,665 43	.....	9,786 49	19
.....	184,229 40	.....	135,481 77	.....	142,410 74	.....	131,760 50	
11.2	20,619 41	19.8	26,909 35	16.5	23,537 65	19.8	26,065 84	i.
11.7	21,475 88	17.4	23,668 43	17.7	25,200 24	17.5	23,032 35	ii.
.7	1,320 04	.9	1,242 08	.9	1,285 43	1.1	1,431 96	iii.
36.5	67,326 02	43.9	59,592 83	45.2	64,432 47	45.4	59,903 01	iv.
3.8	7,044 64	5.6	7,536 08	6.3	8,939 17	7.7	10,126 89	v.
63.9	117,785 99	87.8	118,948 77	86.6	123,394 96	91.5	120,560 05	
.....	66,443 41	.....	16,533 00	.....	19,015 78	.....	11,200 45	
.....	41,371 36	.....	900 33	.....	14,495 81	.....	.....	
.....	.....	.....	928 44	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	126 50	
.....	107,814 77	.....	18,361 77	.....	33,511 59	.....	11,326 95	
.....	4,184 60	.....	.....	.....	944 63	.....	602 01	
.....	34 38	.....	2,314 26	.....	.....	.....	.....	
.....	103,595 79	.....	16,047 51	.....	32,566 96	.....	10,724 94	

Comparative Statement of Earnings and Expenses by

No.	RECEIPTS.	Per cent.	1912 February.	Per Cent.	1913. February.	Per Cent.	1912 March.
	I. Revenue from transportation:		$ c.		$ c.		$ c.
1	Freight revenue	.....	65,709 73	.....	66,495 42	.....	90,127 94
2	Passenger revenue	.....	33,455 35	.....	34,292 78	.....	47,011 67
3	Excess baggage revenue	.....	518 41	.....	558 68	.....	528 70
4	Parlor and chair car revenue	.....	77 55	.....	132 65	.....	105 95
5	Mail revenue	.....	1,583 40	.....	1,659 20	.....	1,799 09
6	Express revenue	.....	3,055 43	.....	2,150 48	.....	3,028 44
7	Milk revenue (on passenger trains)	.....	74 63	.....	46 66	.....	86 65
8	Other passenger train revenue	.....	.....	.....	.....	.....	.....
9	Switching revenue	.....	638 88	.....	702 05	.....	612 23
10	Special service train revenue	.....	.....	.....	.....	.....	.....
11	Miscellaneous transportation revenue	.....	.....	.....	.....	.....	.....
	Totals	.....	105,113 38	.....	106,037 92	.....	143,300 67
	II. Revenue from operations other than transportation						
12	Station and train privileges	.....	245 82	.....	329 16	.....	495 82
13	Parcel room receipts	.....	.....	.....	.....	.....	.....
14	Storage—freight	.....	121 43	.....	38 07	.....	99 70
15	Storage—baggage	.....	97 95	.....	46 20	.....	77 85
16	Car service demurrage	.....	356 00	.....	650 90	.....	443 00
17	Telegraph and telephone	.....	2,342 19	.....	2,138 38	.....	2,653 53
18	Rents of buildings and other property	.....	3,829 14	.....	1,481 23	.....	2,770 81
19	Miscellaneous	.....	128 71	.....	50	.....	17 66
	Totals	.....	7,121 24	.....	4,684 44	.....	6,558 37
	Total revenue	.....	112.234 62	.....	110,722 36	.....	149,859 04
	EXPENDITURES.						
i.	Maintenance of way and structures	18.7	20,909 69	17.	18,841 55	14.3	21,398 65
ii.	Maintenance of equipment	17.3	19,396 38	18.8	20,760 23	15.5	23,246 52
iii.	Traffic expenses	1.	1,573 32	1.2	1,290 73	1.1	1,705 91
iv.	Transportation expenses	50.6	56,609 09	52.3	57,969 66	41.8	62,683 28
v.	General expenses	7.	7,789 43	7.9	8,753 36	4.6	6,918 76
	Total operating expenses	94.6	106,277 91	97.2	107.615 53	77.3	115,953 12
	Balance	.....	5,956 71	.....	3,106 83	.....	33,905 92
	Other Income						
	Ore royalties	.....	.....	.....	4,178 90	.....	2,157 91
	Hire of equipment	.....	.....	.....	.....	.....	.....
	Outside Operations	.....	.....	.....	.....	.....	.....
	Totals	.....	5,956 71	.....	7,285 73	.....	36,063 83
	Deductions from income:						
	Hire of equipment	.....	1,281 37	.....	1,437 43	.....	.....
	Outside operations	.....	310 00	.....	104 68	.....	920 00
	Net result	.....	4,365 34	.....	5,743 62	.....	35,143 83

Months, November, 1911, to October, 1913—Continued.

Per Cent.	1913 March.	Per Cent.	1912 April.	Per Cent.	1913 April.	Per Cent.	1912 May.	No.
	$ c.		$ c.		$ c.		$ c.	
.....	75,142 39	.....	75,713 77	.....	87,030 69	.....	77,146 54	1
.....	41,968 17	.....	55,439 58	.....	47,386 33	.....	57,996 89	2
.....	497 35	.....	678 71	.....	740 92	.....	738 20	3
.....	143 80	.....	132 75	.....	142 00	.....	152 00	4
.....	1,792 96	.....	1,717 87	.....	1,792 96	.....	1,813 63	5
.....	2,549 41	.....	3,510 77	.....	3,368 85	.....	3,980 64	6
.....	48 75	.....	84 15	.....	70 65	.....	73 26	7
.....	.....	.....	.....	.....	.....	.....	.....	8
.....	71 34	.....	828 72	.....	1,247 20	.....	771 92	9
.....	.....	.....	180 00	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	122,214 17	.....	138,286 32	.....	141,779 60	.....	142,673 08	
.....	329 16	.....	383 43	.....	329 16	.....	329 16	12
.....	.....	.....	.....	.....	.....	.....	.....	13
.....	74 25	.....	46 66	.....	43 33	.....	109 43	14
.....	47 85	.....	106 35	.....	68 15	.....	124 25	15
.....	265 60	.....	1,422 00	.....	778 00	.....	1,183 50	16
.....	3,194 86	.....	1,583 04	.....	2,591 63	.....	2,849 97	17
.....	1,867 61	.....	697 66	.....	766 28	.....	9,553 90	18
.....	6 25	.....	.....	.....	18 61	.....	288 79	19
.....	5,785 58	.....	4,239 14	.....	4,595 16	.....	14,439 00	
.....	127,999 75	.....	142,525 46	.....	146,374 76	.....	157,112 08	
18.2	23,285 60	16.	22,788 35	18.3	26,798 41	24..	37,943 57	
18.4	23,496 84	16.9	24,183 12	18.	26,271 90	14.3	22,511 91	ii.
1.3	1,730 74	.9	1,355 18	1.3	1,836 80	.8	1,205 55	iii.
51.1	65,448 22	36.1	51,472 42	40.2	58,881 81	34.3	54,005 66	iv.
6.7	8,521 15	5.6	7,938 55	6.9	10,167 15	5.1	7,923 61	v
95.7	122,482 55	75.5	107,737 62	84.7	123,956 07	78.5	123,590 30	
.....	5,517 20	.....	34,787 84	.....	22,418 69	.....	33,521 78	
.....	.....	.....	16,129 24	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	368 80	.....	.....	.....	.....	
.....	5,517 20	.....	51,285 88	.....	22,418 69	.....	33,521 78	
.....	2,608 63	.....	.....	.....	4,966 69	.....	2,031 32	
.....	40 65	.....	416 50	.....	116 95	.....	300 00	
.....	2,867 92	.....	50,869 38	.....	17,335 05	.....	31,190 46	

Comparative Statement of Earnings and Expenses by

No.	RECEIPTS	Per Cent.	1913 May.	Per Cent.	1912 June.	Per Cent.	1913 June.
			$ c.		$ c		$ c.
	I. Revenue from transportation:						
1	Freight revenue	.....	74,228 91	.....	57,728 30	.....	65,319 92
2	Passenger revenue	.....	51,546 15	.....	50,493 82	.....	51,975 73
3	Excess baggage revenue	.....	701 85	.....	576 16	.....	660 65
4	Parlor and chair car revenue.	.....	163 70	.....	135 40	.....	178 25
5	Mail revenue	.....	1,871 92	.....	1,665 80	.....	1,714 00
6	Express revenue	.....	3,429 41	.....	4,061 11	.....	4,119 98
7	Milk revenue (on passenger trains)	.....	18 00	.....	50 02	.....	15 20
8	Other passenger train revenue	.....	.....	.....	.....	.....	.....
9	Switching revenue	.....	925 15	.....	427 34	.....	678 32
10	Special service train revenue.	.....	25 00	.....	1,425 20	.....	108 75
11	Miscellaneous Transportation Revenue	.....	.....	.....	.....	.....	.....
	Totals	.....	132,910 09	.....	116,563 15	.....	124,770 80
	II. Revenue from operations other than transportation:						
12	Station and train privileges	.....	329 16	.....	367 31	.....	329 16
13	Parcel room receipts	.....	.....	.....	.....	.....	.....
14	Storage—freight	.....	75 09	.....	86 59	.....	112 20
15	Storage—baggage	.....	61 35	.....	114 70	.....	58 95
16	Car service demurrage	.....	493 00	.....	662 00	.....	175 85
17	Telegraph and Telephone	.....	2,782 48	.....	2,486 42	.....	2,870 51
18	Rents of buildings and other property	.....	4.294 30	.....	681 66	.....	1,076 60
19	Miscellaneous	.....	17 31	.....	22 96	.....	20
	Totals	.....	8,052 69	.....	4,421 64	.....	4,623 47
	Total Revenue	.....	140,962 78	.....	120,984 79	.....	129,394 27
	EXPENDITURES.						
i.	Maintenance of way and structures	25.5	35,898 83	27.5	33,313 04	30.7	39,698 28
ii.	Maintenance of equipment	14.4	20,350 41	15.5	18,814 51	15.	19,437 99
iii.	Traffic expenses	.9	1,279 70	.9	1,118 81	1.1	1,441 46
iv.	Transportation expenses	38.2	53,788 53	42.	50,848 91	40.2	51,971 40
v.	General expenses	5.4	7,657 32	5.5	6,701 93	6.6	8,586 96
	Total operating expenses.	84.4	118,974 79	91.4	110,797 20	93.6	121,136 09
	Balance	.....	21,987 99	.....	10,187 59	.....	8,258 18
	Other income:						
	Ore royalties	.....	.....	.....	26,437 70	.....	12,915 65
	Hire of equipment	.....	390 80	.....	.....	.....	.....
	Outside Operations	.....	.....	.....	4,132 02	.....	.....
	Totals	.....	22,378 79	.....	40,757 31	.....	21,173 83
	Deductions from income:						
	Hire of equipment	.....	.....	.....	.....	.....	1,056 48
	Outside operations	.....	.....	.....	620 00	.....	12 38
	Net result	.....	22,378 79	.....	40.137 31	.....	20.104 97

Months, November, 1911, to October, 1913---Continued.

Per Cent.	1912 July.	Per Cent.	1913 July.	Per Cent.	1912 August.	Per Cent.	1913 August.	No.
	$ c		$ c.		$ c.		$ c.	
.....	62,251 60	.....	68,904 28	.....	66,561 98	.....	70,249 91	1
.....	53,193 98	.....	59,492 86	.....	53,811 01	.....	53,628 66	2
.....	518 68	.....	506 40	.....	517 76	.....	476 44	3
.....	175 85	.....	140 50	.....	183 00	.....	186 35	4
.....	1,799 07	.....	1,485 53	.....	1,799 07	.....	1,468 17	5
.....	3,971 91	.....	4,110 41	.....	3,648 15	.....	3,871 50	6
.....	9 71	.....	14 75	.....	17 82	.....	.....	7
.....	.....	.....	.....	.....	.....	.....	.....	8
.....	502 52	.....	610 42	.....	790 55	.....	270 27	9
.....	.....	.....	293 75	.....	69 20	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	122,423 32	.....	135,558 90	.....	127,398 54	.....	130,151 30	
.....	329 16	.....	329 16	.....	329 16	.....	329 16	12
.....	.....	.....	.....	.....	.....	.....	.....	13
.....	61 80	.....	127 39	.....	44 54	.....	56 00	14
.....	88 35	.....	86 60	.....	71 60	.....	87 20	15
.....	518 00	.....	626 30	.....	912 50	.....	781 00	16
.....	2,625 04	.....	2,793 58	.....	2,636 01	.....	2,704 12	17
.....	2,399 00	.....	4,784 37	.....	644 08		4,136 09	18
.....	.....	.....	57 23	.....	100 94	.....	29 69	19
.....	6,021 35	.....	8,804 63	.....	4,738 83	.....	8,123 26	
.....	128,444 67	.....	144,363 53	.....	132,137 37	.....	138,274 56	
24.6	31,631 48	29.8	42,712 02	28.3	37,333 97	35.	48,397 22	i.
14.4	18,489 97	13.1	18,945 22	13.7	18,144 85	12.7	17,612 11	ii.
1.4	1,765 83	1.	1,505 54	1.3	1,791 12	1.1	1,524 82	iii.
39.2	50,462 29	33.9	49,020 86	40.7	53,884 72	38.	52,555 90	iv.
5.8	7,323 30	5.9	8,526 14	6.2	8,122 46	7.2	9,885 67	v.
85.4	109,672 87	83.7	120,709 78	90.2	119,277 12	94.	129,975 72	
.....	18,771 80	.....	23,653 75	.....	12,860 25	.....	8,298 84	
.....	.....	.....	384 78	.....	.....	.....	.....	
.....	992 42	.....	1,538 03	.....	1,459 57	.....	760 64	
.....	.....	.....	.....	.....	.....	.....	163 61	
.....	19,764 22	.....	25,576 56	.....	14,319 82	.....	9,223 09	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	67 14	.....	310 85	.....	.....	
.....	19,764 22	.....	25,509 42	.....	14,008 97	.....	9,223 09	

Comparative Statement of Earnings and Expenses by

No.	RECEIPTS.	Per cent	1912 September.	Per cent.	1913 September.	Per cent.	1912 October.	Per cent
			$ c.		$ c.		$ c.	
	I. Revenue from transportation:							
1	Freight revenue	....	69,458 48	.....	77,660 17	.....	72,324 96	
2	Passenger revenue	....	45,087 32	.....	56,065 00	.....	47,568 72	....
3	Excess baggage revenue	....	561 11	.....	666 56	.....	876 97	....
4	Parlor and chair car revenue	....	172 55	.....	166 80	.....	179 50	....
5	Mail revenue	....	1,665 80	.....	1,542 68	.....	1,799 05	....
6	Express revenue	....	3,826 76	.....	4,687 64	.....	3,725 83	....
7	Milk revenue (on passenger trains)	....	31 92	.....	.....	.....	31 26	....
8	Other passenger train revenue	....	.....	.....	.....	.....	.....	....
9	Switching revenue	....	424 79	.....	442 51	.....	1,413 71	....
10	Special service train revenue	....	181 25	.....	.....	.....	875 50	....
11	Miscellaneous transportation revenue	....	.....	.....	.....	.....	.....	....
	Totals	....	121,409 98	.....	141,231 36	.....	128,795 50	....
	II. Revenue from operations other than transportation:							
12	Station and train privileges	....	329 16	.....	329 16	.....	329 16	....
13	Parcel room receipts	....	.....	.....	.....	.....	.....	....
14	Storage—freight	....	40 26	.....	124 23	.....	75 05	....
15	Storage—baggage	....	64 45	.....	60 25	.....	55 60	....
16	Car service demurrage	....	1,222 20	.....	2,406 00	.....	1,179 95	....
17	Telegraph and telephone	....	2,383 77	.....	3,098 45	.....	2,773 92	....
18	Rents of buildings and other property	....	3,857 51	.....	546 66	.....	4,227 20	....
19	Miscellaneous	....	.....	.....	103 27	.....	1,285 64	....
	Totals	....	7,897 35	.....	6,668 02	.....	9,926 52	....
	Total Revenue	....	129,307 33	.....	147,899 38	.....	138,722 02	....
	EXPENDITURES.							
i.	Maintenance of way and structures	28.8	37,237 61	35.6	52,693 23	26.9	37,429 47	34.3
ii.	Maintenance of equipment	13.	16,780 78	11.6	17,181 13	13.7	18,765 66	7.1
iii.	Traffic expenses	1.6	2,086 54	.8	1,150 92	.8	1,102 00	,6
iv.	Transportation expenses	40.1	51,880 06	35.1	51,843 67	38.9	54,052 18	37,6
v.	General expenses	5.7	7,332 06	6.4	9,500 37	6.8	9,557 67	4.7
	Total operating expenses	89.2	115,317 05	89.5	132,369 32	87.1	120,906 98	84.3
	Balance	....	13,990 28	.....	15,530 06	.....	17,815 04	....
	Other income:							
	Ore royalties	....	24,137 70	.....	38,173 05	.....	12,928 50	....
	Hire of equipment	....	205 11	.....	79 08	.....	1,509 54	....
	Outside operations	....	.....	.....	695 86	.....	.....	....
	Totals	....	38,333 09	.....	54,478 05	.....	32,253 08	....
	Deductions from income:							
	Hire of equipment	....	.....	.....	.....	.....	.....	....
	Outside operations	....	.....	.....	.....	.....	179 35	....
	Net results	....	38,333 09	.....	54,478 05	.....	32,073 73	....

Months, November, 1911, to October, 1913.---Continued.

1913 October.	Per cent	1912 Total.	Per cent	1913 Total.	Increase.	Decrease.	Net Increase.	Net decrease.	No.
$ c		$ c.		$ c.	$ c.	$ c.	$ c.	$ c.	
88,456 58	....	929,464 66	....	906.476 16	.....	22.988 50	.....	.....	1
54.593 13	....	599,681 73	....	576,049 37	.....	23,632 36	.....	.....	2
680 60	....	7,129 95	....	7.014 31	.....	115 64	.....	.....	3
171 90	....	1,593 35	....	1.771 30	177 95	.....	.....	.....	4
1,548 22	....	20,229 29	....	20,129 85	.....	99 44	.....	.....	5
3,922 05	....	47.010 31	....	42.170 54	.....	4,839 77	.....	.....	6
.....	....	612 03	....	366 74	.....	245 29	.....	.....	7
.....	....	.....	....	.....	.....	.....	.....	.....	8
581 78	....	10,082 97	....	6,096 47	.....	3,986 50	.....	.....	9
717 50	....	2,731 15	....	7.153 69	4,422 54	.....	.....	.....	10
.....	....	.....	....	.....	.....	.....	.....	.....	11
150,671 76	....	1,618.535 44	....	1.567,228 43	4,600 49	55.907 50	.....	51.307 01	
329 16	....	3,996 32	....	3,949 92	.....	46 40	.....	.....	12
.....	....	.....	....	.....	.....	.....	.....	.....	13
92 84	....	831 73	....	900 05	68 32	.....	.....	.....	14
86 10	....	1,064 25	....	786 00	.....	278 25	.....	.....	15
659 50	....	10,898 15	....	12,766 45	1,868 30	.....	.....	.....	16
3,320 99	....	31,279 56	....	32,545 73	1.266 17	.....	.....	.....	17
12,200 38	....	36.188 32	....	37.409 33	1,221 01	.....	.....	.....	18
208 69	....	4,656 30	....	568 94	.....	4,087 36	.....	.....	19
16,897 66	....	88,914 63	....	88.926 42	4,423 80	4,412 01	11 79	.....	
167,569 42	....	1,707,450 07	....	1,656,154 85	9,024 29	60.319 51	.....	51.295 22	
57,544 73	20.3	346,964 01	26.	430,820 04	83,856 03	.....	.....	.....	i.
11,948 76	14.6	249,683 22	14.1	242,633 93	.....	7,049 29	.....	.....	ii.
1,107 91	1.1	17,461 22	1.	16,857 36	.....	603 86	.....	.....	iii.
63,012 02	39.6	676,963 33	41.1	680,480 08	3,516 75	.....	.....	.....	iv.
7,891 19	5.5	93,625 91	6.5	106,758,60	13.132 69	.....	.....	.....	v.
141,504 61	81.1	1,384,697 69	88.7	1,477,550 01	100,505 47	7,653 15	92.852 32	.....	
26,064 81	....	322,752 38	....	178,604 84	.....	144.147 54	.....	.....	
15,110 22	....	135,500 31	....	81,421 20	.....	54,079 11	.....	.....	
557 40	....	10,825 37	....	4,953 46	.....	5,871 91	.....	.....	
2,685 55	....	.....	....	3,671 52	3,671 52	.....	.....	.....	
44,417 98	....	469,078 06	....	268,651 02	3.671 52	204.098 56	.....	.....	
.....	....	11,480 53	....	10,671 24	.....	809 29	.....	.....	
.....	....	3,395 79	....	2,656 06	.....	739 73	.....	.....	
44,417 98	....	454,201 74	....	255,323 72	3,671 52	202.549 54	.....	198,878 02	

Comparative Statement of Earnings and Expenses by

No.	Maintenance of Way and Structures	1911 November.	1912 November.	1911 December.	1912 December,
		$ c.	$ c.	$ c.	$ c.
1	Superintendence	1,683 91	2,677 05	1,545 33	2,526 44
2	Ballast	43 98	772 96	9 50	29 72
3	Ties	482 64	1,886 73	.....	217 75
4	Rails	140 45	864 06	119 52	2,817 16
5	Other Track Material	586 38	290 75	852 92	739 88
6	Roadway and Track	11,125 59	16,235 26	10,585 23	11,621 79
7	Removal of Snow, Sand and Ice	3,011 77	528 62	3,408 74	2,484 75
8	Tunnels	.....	.....	.....	.....
9	Bridges, Trestles and Culverts	899 13	2,269 67	972 64	4,144 26
10	Over and Under Grade Crossings	.....	.....	.....	109 04
11	Grade Crossings, Fences, Cattle Guards and Signs	395 70	103 83	134 95	51 24
12	Snow and Sand Fences and Snowsheds	.....	.....	.....	.....
13	Signals and Interlocking Plants	2 67	.....	20 90	12
14	Telegraph and Telephone Lines	430 58	1,022 56	540 52	768 44
15	Electric Power Transmission	.....	.....	.....	.....
16	Buildings, Fixtures and Grounds	3,629 92	5,180 06	2,813 60	1,266 38
17	Docks and Wharves	.....	.....	.....	.....
18	Roadway Tools and Supplies	378 97	293 47	434 64	351 19
19	Injuries to Persons	.....	.....	Cr. 455 34	30 00
20	Stationery and Printing	9 43	110 98	23 29	32 39
21	Other Expenses	.....	.....	.....	.....
22	Maintaining Joint Tracks, Yards and other Facilities—Dr.	.....	.....	.....	.....
23	Maintaining Joint Tracks, Yards and other Facilities—Cr.	.....	Cr. 261 02	Cr. 387 03	Cr. 281 20
	Totals	22,821 12	31,974 98	20,619 41	26,909 35
	Maintenance of Equipment.				
24	Superintendence	1,220 63	599 24	1,043 19	522 20
25	Steam Locomotives—Repairs	9,116 40	6,922 00	8,382 92	6,822 95
26	" " Renewals	.....	.....	.....	.....
27	" " Depreciation	1,105 58	1,249 63	1,105 58	1,249 63
28	Electric Locomotives—Repairs	.....	.....	.....	.....
29	" " Renewals	.....	.....	.....	.....
30	" " Depreciation	.....	.....	.....	.....
31	Passenger Train Cars—Repairs	4,422 59	4,357 49	3,801 08	7,928 66
32	" " " Renewals	.....	Cr. 9 85	.....	.....
33	" " " Depreciation	739 69	746 40	739 69	746 40
34	Freight Train Cars—Repairs	3,195 66	3,631 32	4,280 63	3,320 19
35	" " " Renewals	.....	.....	.....	.....
36	" " " Depreciation	1,044 80	1,074 16	1,044 80	1,074 16
37	Electric Equipment of Cars—Repairs	.....	.....	.....	.....
38	" " " Renewals	.....	.....	.....	.....
39	" " " Depreciation	.....	.....	.....	.....
40	Floating Equipment—Repairs	.....	.....	.....	.....
41	" " Renewals	.....	.....	.....	.....
42	" " Depreciation	.....	.....	.....	.....
43	Work Equipment—Repairs	981 47	495 72	320 88	1,012 04
44	" " Renewals	.....	.....	.....	.....
45	" " Depreciation	248 96	248 96	248 96	248 96
46	Shop Machinery and Tools	397 54	456 31	533 92	533 56
47	Power Plant Equipment	.....	.....	.....	.....
48	Injuries to Persons	.....	67 85	.....	.....
49	Stationery and Printing	12 87	Cr. 3 29	58 95	63 49
50	Other Expenses	187 21	92 62	Cr. 84 72	146 19
51	Maintaining Joint Equipment at Terminals—Dr.	.....	.....	.....	.....
52	Maintaining Joint Equipment at Terminals—Cr.	.....	.....	.....	.....
	Totals	22,673 40	19,928 56	21,475 88	23,668 43

Months, November. 1911, to October, 1913.---Continued

1912 January.	1913 January.	1912 February.	1913 February.	1912 March.	1913 March.	No
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
2,153 77	2,019 39	1,729 78	2,099 56	1,918 86	1,887 48	1
100 01	61 01	124 94	87 95	298 48	3 22	2
1,621 19	Cr. 213 85	.....	Cr. 303 69	.....	Cr. 252 34	3
54 59	789 07	122 06	176 39	790 98	379 26	4
14 53	342 71	677 66	633 81	1,889 00	824 83	5
7,876 33	11,342 79	8,638 41	7,005 40	11,165 45	8,055 23	6
7,358 45	4,585 19	6,745 15	6,888 97	2,357 66	7,280 03	7
.....	.....	.....	.....	.....	.....	8
851 03	3,954 60	611 73	1,394 52	969 30	1,805 94	9
.....	.....	.....	.....	.....	4 17	10
734 40	80 26	Cr. 5 54	41 86	7 31	104 18	11
.....	.....	.....	.....	.....	.....	12
8 10	12	.....	3 50	2 91	.....	13
585 48	753 94	509 88	504 14	515 40	553 39	14
.....	.....	.....	.....	.....	.....	15
1,996 88	2,354 52	1,451 78	1,835 13	1,341 87	2,572 31	16
.....	.....	.....	.....	.....	.....	17
541 92	644 95	411 31	Cr. 738 49	510 84	828 00	18
Cr. 25 00	10 00	600 00	.....	4 00	.....	19
82 02	68 50	37 60	43 06	51 90	172 78	20
.....	.....	.....	.....	.....	.....	21
.....	.....	.....	.....	.....	.....	22
Cr. 416 05	Cr. 727 36	Cr. 745 07	Cr. 830 56	Cr. 425 31	Cr. 932 88	23
23,537 65	26,065 84	20,909 69	18,841 55	21,398 65	23,285 60	
1,300 66	568 74	1,254 96	510 78	1,192 61	573 55	24
9,769 30	8,932 76	5,377 46	7,293 15	12,417 25	8,146 45	25
.....	.....	.....	.....	.....	.....	26
1,105 58	1,249 63	1,105 58	1,249 63	1,105 58	1,249 63	27
.....	.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	30
3,793 28	4,124 21	3,872 87	4,355 30	693 39	5,092 23	31
.....	.....	.....	.....	.....	.....	32
739 69	746 40	739 69	746 40	739 69	746 40	33
4,844 19	5,129 99	3,892 72	3,859 68	5,168 65	3,064 50	34
.....	.....	.....	.....	.....	.....	35
1,044 80	1,074 16	1,044 80	1,074 16	1,044 80	1,074 16	36
.....	.....	.....	.....	.....	.....	37
.....	.....	.....	.....	.....	.....	38
.....	.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	42
1,812 39	215 71	1,403 11	647 64	Cr. 130 75	2,531 16	43
.....	.....	.....	Cr. 33 00	.....	.....	44
248 96	248 96	248 96	248 96	248 96	248 96	45
366 72	489 50	304 29	688 12	581 05	523 96	46
.....	.....	.....	.....	.....	.....	47
.....	.....	1 81	.....	1 02	.....	48
114 71	45 04	92 83	109 93	119 96	121 50	49
59 96	207 25	57 30	9 48	64 31	124 34	50
.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	52
25,200 24	23,032 35	19,396 38	20,760 23	23,246 52	23,496 84	

Comparative Statement of Earnings and Expenses by

No.	Maintenance of Way and Structures.	1912 April.	1913 April.	1912 May.	1913 May.
		$ c.	$ c.	$ c.	$ c.
1	Superintendence	1,868 88	1,943 67	2,143 48	2,263 61
2	Ballast	562 90	64 80	104 25	116 52
3	Ties	2,356 54	2,359 38	2,250 94	5,343 28
4	Rails	554 32	430 92	283 79	3,066 32
5	Other Track Material	132 37	1,727 75	522 58	493 86
6	Roadway and Track	13,931 61	12,865 54	19,988 03	15,934 51
7	Removal of Snow, Sand and Ice	254 39	1,598 89	103 26	1,350 95
8	Tunnels				
9	Bridges, Trestles and Culverts	116 97	1,865 72	7,541 52	2,937 84
10	Over and Under Grade Crossings		2 85	1 52	109 97
11	Grade Crossings, Fences, Cattle Guards and Signs	235 34	132 04	652 72	521 13
12	Snow and Sand Fences and Snowsheds				
13	Signals and Interlocking Plants		11 40	3 03	
14	Telegraph and Telephones Lines	438 50	536 74	370 80	522 10
15	Electric Power Transmission				
16	Buildings, Fixtures and Grounds	1,687 01	2,771 33	4,155 52	2,965 56
17	Docks and Wharves				
18	Roadway Tools and Supplies	1,476 79	786 42	917 98	592 41
19	Injuries to Persons		25 00	2 00	
20	Stationery and Printing	28 78	37 35	100 90	113 19
21	Other Expenses				
22	Maintaining Joint Tracks, Yards and other facilities—Dr.				
23	Maintaining Joint Tracks, Yards and other facilities—Cr.	Cr. 856 05	Cr. 361 39	Cr. 1,198 75	Cr. 432 42
	Totals	22,788 35	26,798 41	37,943 57	35,898 83
	Maintenance of Equipment.				
24	Superintendence	873 79	542 50	1,125 90	537 70
25	Steam Locomotives—Repairs	8,468 55	8,173 69	7,803 76	8,314 49
26	" " Renewals				
27	" " Depreciation	1,105 58	1,249 63	1,105 58	1,249 63
28	Electric Locomotives—Repairs				
29	" " Renewals				
30	" " Depreciation				
31	Passenger Train Cars—Repairs	3,275 10	4,610 03	3,796 59	3,798 98
32	" " " Renewals				
33	" " " Depreciation	739 69	746 40	739 69	746 40
34	Freight Train Cars—Repairs	4,207 84	4,518 84	3,303 66	316 28
35	" " " Renewals				
36	" " " Depreciation	1,044 80	1,074 16	1,044 80	1,074 16
37	Electric Equipment of Cars—Repairs				
38	" " " Renewals				
39	" " " Depreciation				
40	Floating Equipment—Repairs				
41	" " Renewals				
42	" " Depreciation				
43	Work Equipment—Repairs	3,808 03	4,065 47	2,635 20	3,047 11
44	" " Renewals				
45	" " Depreciation	248 96	248 96	248 96	248 96
46	Shop Machinery and Tools	313 64	710 54	382 17	896 09
47	Power Plant Equipment				
48	Injuries to Persons		13 68		
49	Stationery and Printing	54 34	102 78	162 21	89 77
50	Other Expenses	42 80	215 22	163 39	30 84
51	Maintaining Joint Equipment at Terminals—Dr.				
52	Maintaining Joint Equipment at Terminals—Cr.				
	Totals	24,183 12	26,271 90	22,511 91	20,350 41

Months, November, 1911, to October, 1913.

1912 June.	1913 June.	1912 July.	1913 July.	1912 August.	1913 August.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
2,006 25	1,587 91	2,288 98	2,419 76	1,941 02	1,601 50	1
7 88	986 67	3 23	799 13	2,103 20	2,561 79	2
2,138 02	1,730 21	2,768 19	4 949 64	7,537 27	6,346 67	3
Cr. 49 13	2,163 46	1,876 61	2,388 43	390 64	6,213 33	4
258 87	120 94	689 08	408 03	495 12	492 42	5
20,940 43	22,514 58	17,922 11	23,880 54	18,046 75	22,300 87	6
.....	25 27	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	8
1,734 51	3,208 89	1,126 23	3,297 88	1,793 01	2,543 71	9
.....	600 36	.....	Cr. 683 80	.....	.....	10
868 79	483 10	615 89	683 95	751 21	1,331 73	11
.....	.....	.....	.....	.....	.....	12
.....	.....	21 00	.....	.....	.....	13
948 40	638 65	1,258 97	741 50	1,158 62	805 86	14
.....	.....	.....	.....	.....	.....	15
3,606 81	5,417 83	2,578 95	3,709 58	3,066 21	3,759 55	16
.....	.....	.....	.....	.....	.....	17
579 99	992 26	959 97	583 63	587 95	806 01	18
455 34	.....	.....	.....	75 00	.....	19
34 47	66 11	160 37	188 43	47 43	50 32	20
.....	.....	.....	.....	.....	.....	21
.....	.....	.....	.....	.....	.....	22
Cr. 271 59	Cr. 837 96	Cr. 638 10	Cr. 654 68	Cr. 659 46	Cr. 416 54	23
33,313 04	39,698 28	31,631 48	42,712 02	37,333 97	48,397 22	
844 68	500 65	1,160 01	493 18	764 80	528 66	24
7,763 35	7,619 63	7,530 05	7,410 97	6,761 27	6,461 86	25
.....	.....	.....	.....	.....	.....	26
1,105 58	1,249 63	2,105 58	1,249 63	1,105 58	1,249 63	27
.....	.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	30
3,526 61	4,256 18	3,761 58	3,810 69	3,576 77	4,493 50	31
.....	.....	.....	.....	.....	.....	32
739 69	746 40	739 69	746 40	739 69	746 40	33
2,474 90	1,050 14	3,926 72	1,812 07	2,431 83	1,654 79	34
Cr. 519 02	.....	.....	.....	.....	.....	35
1,044 80	1,074 16	1,044 80	1,074 16	1,044 80	1,074 16	36
.....	.....	.....	.....	.....	.....	37
.....	.....	.....	.....	.....	.....	38
.....	.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	42
1,006 95	1,894 94	Cr. 1,522 69	1,106 06	455 93	759 50	43
.....	.....	.....	.....	.....	.....	44
248 96	248 96	248 96	248 96	248 96	248 96	35
272 39	578 58	322 87	650 08	464 71	318 54	36
.....	.....	.....	.....	.....	.....	37
12 18	.....	08	.....	76 08	7 59	48
83 11	74 39	43 30	146 93	71 45	77 21	49
210 33	144 33	129 02	196 09	402 98	Cr. 8 69	50
.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	52
18,814 51	19,437 99	18,489 97	18,945 22	18,144 85	17,612 11	

Comparative Statement of Earnings and Expenses by

No.	Maintenance of Way and Structures.	1912 September.	1913 September.	1912 October.	1913 October.
		$ c.	$ c.	$ c.	$ c.
1	Superintendence	1,754 41	2,572 70	2,351 73	2,220 36
2	Ballast	3,280 79	3,866 72	4,329 70	436 98
3	Ties	7,532 96	8,307 19	6,919 89	17,474 99
4	Rails	104 33	2,036 41	1,549 20	2,338 83
5	Other Track Material	Cr. 491 45	Cr. 341 54	224 77	1,003 90
6	Roadway and Track	17,672 61	26,062 00	21,849 62	25,023 64
7	Removal of Snow, Sand and Ice	47 16		14 16	197 63
8	Tunnels				
9	Bridges, Trestles and Culverts	2,241 92	2,905 79	Cr. 5,093 84	2,780 49
10	Over and Under Grade Crossings		9 50		
11	Grade Crossings, Fences, Cattle Guards and Signs	390 79	747 80	25 45	897 53
12	Snow and Sand Fences and Snowsheds				
13	Signals and Interlocking Plants			8 31	55 40
14	Telegraph and Telephone Lines	769 60	739 97	2,178 97	1,117 58
15	Electric Power Transmission				
16	Buildings, Fixtures and Grounds	4,080 60	6,724 49	3,498 50	5,452 90
17	Docks and Wharves				
18	Roadway, Tools and Supplies	379 64	410 96	223 46	566 64
19	Injuries to Persons				50 00
20	Stationery and Printing	16 82	91 44	17 45	85 15
21	Other Expenses				
22	Maintaining Joint Tracks, Yards and other Facilities—Dr.				
23	Maintaining Joint Tracks, Yards and other Facilities—Cr.	Cr. 542 57	Cr. 1,440 20	Cr. 667 90	Cr. 2,157 29
	Totals	37,237 61	52,693 23	37,429 47	57,544 73
	Maintenance of Equipment.				
24	Superintendence	786 93	519 52	790 52	542 46
25	Steam Locomotive—Repairs	7,026 59	6,594 15	8,189 98	5,673 02
26	" " Renewals				
27	" " Depreciation	1,105 58	1,249 63	1,105 58	1,249 63
28	Electric Locomotive—Repairs				
29	" " Renewals				
30	" " Depreciation				
31	Passenger Train Cars—Repairs	1,728 34	4,208 73	5,063 16	5,150 06
32	" " " Renewals				
33	" " " Depreciation	739 69	746 40	739 69	746 40
34	Freight Train Cars—Repairs	4,048 61	839 07	149 34	Cr. 4,599 64
35	" " " Renewals	Cr. 1,293 48			
36	" " " Depreciation	1,044 80	1,074 16	1,044 80	1,074 16
37	Electric Equipment of Cars—Repairs				
38	" " " Renewals				
39	" " " Depreciation				
40	Floating Equipment—Repairs				
41	" " Renewals				
42	" " Depreciation				
43	Work Equipment—Repairs	858 87	785 87	828 56	1,046 63
44	" " Renewals	Cr. 54 78			
45	" " Depreciation	248 96	248 96	248 96	248 96
46	Shop Machinery and Tools	413 53	620 89	409 90	643 79
47	Power Plant Equipment				
48	Injuries to Persons			5 00	52 69
49	Stationery and Printing	98 23	87 97	68 02	13 62
50	Other Expenses	28 91	205 78	122 15	106 98
51	Maintaining Joint Equipment at Terminals—Dr.				
52	Maintaining Joint Equipment at Terminals—Cr.				
	Totals	16,780 78	17,181 13	18,765 66	11,948 76

Months, November, 1911, to October, 1913—Continued.

1912 Total.	1913 Total.	Increase.	Decrease.	Net Increase.	Net Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
23,386 40	25,819 43	2,433 03				1
10,968 86	9,787 47		1,181 39			2
33,607 64	47,845 96	14,238 32				3
5,937 36	23,663 64	17,726 28				4
5,851 83	6,737 34	885 51				5
179,742 17	202,842 15	23,099 98				6
23,300 74	24,940 30	1,639 56				7
						8
13,764 15	33,109 31	19,345 16				9
20 32	152 09	131 77				10
4,788 21	5,178 65	390 44				11
						12
66 92	70 54	3 62				13
9,705 72	8,704 87		1,000 85			14
						15
33,961 65	44,009 64	10,047 99				16
						17
7,403 46	6,117 45		1,286 01			18
656 00	115 00		541 00			19
610 46	1,059 70	449 24				20
						21
						22
Cr. 6,807 88	Cr. 9,333 50	Cr. 2,525 62				23
346,964 01	430,820 04	87,865 28	4,009 25	83,856 03		
12,358 68	6,439 18		5,919 50			24
98,606 88	88,365 12		10,241 76			25
						26
13,266 96	14,995 56	1,728 60				27
						28
						29
						30
41,311 36	56,186 06	14,874 70				31
	Cr. 9 85	Cr. 9 85				32
11,009 57	8,956 80		2,052 77			33
39,791 46	24,597 23		15,194 23			34
Cr. 1,812 50			Cr. 1,812 50			35
12,537 60	12,889 92	352 32				36
						37
						38
						39
						40
						41
						42
12,457 95	17,607 85	5,149 90				43
Cr. 54 78	Cr. 33 00		Cr. 21 78			44
2,987 52	2,987 52					45
4,762 73	7,109 96	2,347 23				46
						47
96 17	141 81	45 64				48
979 98	929 34		50 64			49
1,383 64	1,470 43	86 79				50
						51
						52
249,638 22	242,633 93	24,575 33	31,624 62		7,049 29	

Comparative Statement of Earnings and Expenses by

No.	Traffic Expenses.	1911 November.	1912 November.	1911 December.	1912 December.
		$ c.	$ c.	$ c.	$ c.
53	Superintendence	792 34	792 87	786 93	780 02
54	Outside Agencies	.....	.....	13 52	6 08
55	Advertising	113 25	202 76	306 00	162 50
56	Traffic Associations	.....	.....	.....	.....
57	Fast Freight Lines	.....	.....	.....	.....
58	Industrial and Immigration Bureaus.	119 42	179 90	122 26	120 54
59	Stationery and Printing	126 48	139 17	91 33	172 94
60	Other Expenses	.....	.....	.....	.....
	Totals	1,151 49	1,314 70	1,320 04	1,242 08
	Transportation Expenses.				
61	Superintendence	797 90	861 58	836 47	869 45
62	Despatching Trains	995 07	1,044 91	879 77	1,072 08
63	Station Employees	8,839 30	9,759 95	10,945 11	9,515 88
64	Weighing and Car Service Associations	27 11	44 96	20 93	21 13
65	Coal and Ore Docks	.....	.....	.....	.....
66	Station Supplies and Expenses	1,775 57	1,133 99	1,382 23	1,318 92
67	Yardmasters and their Clerks	146 02	924 98	947 18	998 22
68	Yard Conductors and Brakemen	2,178 55	2,567 93	3,412 91	3,097 91
69	Yard Switch and Signal Tenders	29 21	186 96	76 02	168 53
70	Yard Supplies and Expenses	9 22	88 75	79 38	83 81
71	Yard Enginemen	1,265 84	1,426 58	1,826 50	1,490 80
72	Engine-house Expenses—Yard	375 66	615 18	568 54	702 37
73	Fuel for Yard Locomotives	1,878 81	3,375 12	3,107 20	3,657 06
74	Water for Yard Locomotives	26 04	23 20	4 15	158 91
75	Lubricants for Yard Locomotives	25 29	54 88	52 74	53 18
76	Other Supplies for Yard Locomotives	16 69	26 30	22 91	
77	Operating Joint Yards and Terminals —Dr.	2,779 13	805 03	1,506 27	27 16
78	Operating Joint Yards and Terminals —Cr.		Cr. 5,591 04	Cr 3,986 46	802 82 Cr 5,998 90
79	Motormen	.....	.....	.....	.....
80	Road Enginemen	5,552 44	5,638 92	6,617 07	6,103 62
81	Engine-house Expenses—Road	1,625 96	3,072 38	2,450 27	3,760 30
82	Fuel for Road Locomotives	18,891 47	19,371 54	22,741 33	19,307 08
83	Water for Road Locomotives	1,134 23	786 12	1,468 50	1,324 82
84	Lubricants for Road Locomotives	299 17	263 27	402 31	312 80
85	Other Supplies for Road Locomotives	18 24	124 15	116 47	128 27
86	Operating Power Plants	.....	.....	.....	.....
87	Purchased Power	.....	.....	.....	.....
88	Road Trainmen	6,451 57	6,884 63	7,817 67	6,896 04
89	Train Supplies and Expenses	2,520 18	1,733 50	1,852 07	1,717 81
90	Interlockers, Block and other Signals—Operations	.....	.....	.....	.....
91	Crossing, Flagmen and Gatemen	.....	.....	.....	.....
92	Drawbridge Operation	.....	.....	.....	.....
93	Clearing Wrecks	108 48	30 94	130 63	Cr. 10 36
94	Telegraph and Telephone—Operation.	49 08	187 12	19 75	188 86
95	Operating Floating Equipment	.....	.....	.....	.....
96	Express Service	.....	.....	.....	.....
97	Stationery and Printing	1,253 29	810 11	1,118 62	973 20
98	Other Expenses	Cr, 143 65	111 90	151 60	24 00
99	Loss and Damage—Freight	315 36	59 71	712 88	752 06
100	Loss and Damage—Baggage	.....	.....	25 00	50 00
101	Damage to Property	.....	.....	.....	.....
102	Damage to Stock on Right-of-Way	.....	3 62	20 00	25 00
103	Injuries to Persons	65 00	65 00	.....	.....
104	Operating Joint Tracks—Dr.	.....	.....	.....	.....
105	Operating Joint Tracks—Cr.	.....	.....	.....	.....
	Totals	59,306 23	56,492 17	67,326 02	59,592 83

Months, November, 1911, to October, 1913---Continued.

1912 January.	1913 January.	1912 February.	1913 February.	1912 March.	1913 March.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
821 49	840 23	793 82	759 33	784 96	860 86	53
6 70	.....	15 03	1 78	410 82	1 78	54
83 50	277 24	440 00	270 95	238 24	390 00	55
.....	.....	.....	50	.....	.....	56
.....	.....	.....	.....	.....	.....	57
172 32	164 84	117 67	167 78	136 27	184 28	58
201 42	149 65	206 80	90 39	135 62	293 82	59
.....	.....	.....	.....	.....	.....	60
1,285 43	1,431 96	1,573 32	1,290 73	1,705 91	1,730 74	
866 96	918 62	825 00	922 50	900 28	951 33	61
1,018 93	1,129 47	974 76	1,249 76	1,084 63	1,226 84	62
10,099 50	9,996 84	9,596 45	9,798 53	9,208 03	10,145 57	63
40 22	128 37	19 29	.....	.....	54 02	64
Cr. 857 50	.....	.....	.....	.....	.....	65
1,774 58	1,721 61	1,774 26	2,125 54	1,159 12	2,170 94	66
1,117 24	1,033 39	1,210 85	1,110 95	1,163 77	1,122 39	67
3,342 61	3,003 22	3,083 08	2,606 13	3,397 34	2,893 58	68
161 81	129 39	214 41	47 02	263 15	127 11	69
110 52	98 31	120 93	96 78	88 04	72 96	70
1,907 13	1,545 59	1,807 27	1,420 54	1,877 58	1,633 44	71
879 88	611 34	807 72	460 10	839 67	590 15	72
3,496 17	3,446 01	3,981 36	2,953 34	3,692 65	3,278 56	73
18 63	82 45	74 01	187 27	137 77	69 90	74
72 22	52 32	66 58	46 81	75 45	55 06	75
37 09	34 59	33 21	28 78	31 78	28 10	76
1,097 49	782 79	2,130 42	Cr.2,010 00	1,489 63	799 61	77
Cr. 4,325 67	Cr. 5,801 20	Cr. 9,736 89	Cr. 5,463 97	Cr. 6,788 12	Cr. 5,960 75	78
.....	.....	.....	.....	.....	.....	79
6,169 55	6,118 05	5,404 26	5,795 97	6,587 12	6,623 68	80
3,295 84	3,841 60	2,805 86	4,034 95	3,745 04	4,505 78	81
20,628 14	20,711 23	17,394 30	20,392 20	18,636 39	21,609 23	82
1,661 08	1,478 78	1,892 52	1,460 01	1,790 11	1,589 23	83
402 55	316 87	338 25	321 93	396 38	345 82	84
147 62	161 37	138 12	219 03	124 10	118 32	85
.....	.....	.....	.....	.....	.....	86
.....	.....	.....	.....	.....	.....	87
6,922 23	6,989 66	6,064 15	6,598 48	7,240 94	7,441 27	88
2,018 08	871 96	2,465 09	1,508 98	2,542 37	1,868 74	89
.....	.....	.....	.....	.....	.....	90
.....	.....	.....	.....	.....	.....	91
.....	.....	.....	.....	.....	.....	92
489 90	32 08	47 85	163 57	224 52	279 22	93
20 99	185 00	117 59	191 61	98 78	270 58	94
.....	.....	.....	.....	.....	.....	95
.....	.....	.....	.....	.....	.....	96
1,683 72	759 66	1,174 65	651 05	1,252 96	619 97	97
90 82	42 17	.....	50 30	45 58	59 50	98
10 64	Cr. 528 53	233 74	945 85	114 97	655 77	99
20 00	10 00	.....	Cr. 11 00	Cr. 60 00	73 83	100
.....	.....	.....	.....	.....	.....	101
12 50	.....	50 00	.....	.....	.....	102
1 00	.....	1,500 00	26 65	1,323 25	128 47	103
.....	.....	.....	.....	.....	.....	104
.....	.....	.....	.....	.....	.....	105
64,432 47	59,903 01	56,609 09	57,969 66	62,683 28	65,448 22	

Comparative Statement of Earnings and Expenses

No.	Traffic Expenses.	1912 April.	1913 April.	1912 May.	1913 May.
		$ c.	$ c.	$ c.	$ c.
53	Superintendence	785 27	820 41	829 10	833 17
54	Outside Agencies	.....	4 24	.....	94 50
55	Advertising	252 50	182 50	115 00	.....
56	Traffic Associations	.....	27 22	.....	.....
57	Fast Freight Lines	.....	.....	.....	.....
58	Industrial and Immigration Bureaus.	213 82	150 54	116 95	104 95
59	Stationery and Printing.	103 59	651 89	144 50	247 08
60	Other Expenses	.....	.....	.....	.....
	Totals	1,355 18	1,836 80	1,205 55	1,279 70
	Transportation Expenses.				
61	Superintendence	964 18	1,136 80	843 02	1,000 23
62	Despatching Trains	1,050 86	1,169 42	980 34	1,243 13
63	Station Employees	9,062 17	9,426 04	9,175 91	10,411 56
64	Weighing and Car Service Associations	19 44	26 23	17 56	.....
65	Coal and Ore Docks	.....	.....	.....	.....
66	Station Supplies and Expenses	1,112 58	782 90	396 25	1,375 46
67	Yardmasters and their Clerks	1,118 73	1,031 31	1,096 09	1,003 21
68	Yard Conductors and Brakemen	3,361 85	2,746 88	3,000 16	2,747 83
69	Yard Switch and Signal Tenders	227 24	66 50	232 75	106 78
70	Yard Supplies and Expenses	58 19	51 42	45 49	41 90
71	Yard Enginemen	1,745 94	1,574 72	1,738 73	1,574 16
72	Engine-house Expenses—Yard	650 99	583 78	666 47	441 65
73	Fuel for Yard Locomotives	3,078 76	3,113 60	3,433 46	2,770 00
74	Water for Yard Locomotives	119 06	101 57	79 21	78 64
75	Lubricants for Yard Locomotives	60 71	58 21	54 27	49 95
76	Other Supplies for Yard Locomotives.	25 12	28 34	20 39	26 24
77	Operating Joint Yards and Terminals —Dr	1,444 78	826 19	1,499 72	809 20
78	Operating Joint Yards and Terminals —Cr	6,765 54	5,724 50	6,256 21	5,818 97
79	Motormen	.....	.....	.....	.....
80	Road Enginemen	4,714 12	5,999 16	5,570 50	5,740 34
81	Engine-house Expenses—Road	3,101 88	4,034 83	2,986 15	3,078 63
82	Fuel for Road Locomotives	15,015 00	19,503 49	15,703 48	15,977 91
83	Water for Road Locomotives	1,632 57	1,430 31	1,592 63	1,006 99
84	Lubricants for Road Locomotives	225 02	248 96	275 69	235 48
85	Other Supplies for Road Locomotives.	82 51	90 60	94 62	81 65
86	Operating Power Plants	.....	.....	.....	.....
87	Purchased Power	.....	.....	.....	.....
88	Road Trainmen	5,769 95	6,959 49	6,317 99	6,947 46
89	Train Supplies and Expenses	2,183 28	1,664 44	2,190 66	1,825 35
90	Interlockers, Block and other Signals— Operations	.....	.....	.....	.....
91	Crossing, Flagmen and Gatemen	.....	.....	.....	.....
92	Drawbridge Operation	.....	.....	.....	.....
93	Clearing Wrecks	Cr. 1 40	233 72	643 95	Cr. 7 35
94	Telegraph and Telephone—Operation	164 71	230 00	383 29	190 00
95	Operating Floating Equipment	.....	.....	.....	.....
96	Express Service	.....	.....	.....	.....
97	Stationery and Printing	753 70	828 91	835 01	752 57
98	Other Expenses	.....	117 21	.....	25 50
99	Loss and Damage—Freight	401 02	474 49	331 95	66 64
100	Loss and Damage—Baggage	35 00	56 75	Cr. 10 00	.....
101	Damage to Property	.....	.....	4 00	.....
102	Damage to Stock on Right-of-Way	.....	10 00	54 48	6 39
103	Injuries to Persons	60 00	.....	7 65	.....
104	Operating Joint Tracks—Dr	.....	.....	.....	.....
105	Operating Joint Tracks—Cr	.....	.....	.....	.....
	Totals	51,472 42	58,881 81	54,005 66	53,788 53

by Months, November, 1911, to October, 1913.---Continued.

1912 June.	1913 June.	1912 July.	1913 July.	1912 August.	1913 August.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
788 92	774 89	845 74	921 11	805 27	790 27	53
25 98	22 28	.....	.....	13 12	.....	54
60 00	309 75	627 50	308 10	670 54	353 61	55
.....	25 05	15 00	.....	.....	10 38	56
.....	.....	.....	.....	.....	.....	57
161 94	144 02	140 97	164 89	143 04	196 54	58
81 97	165 47	136 62	111 44	159 15	174 02	59
.....	.....	.....	.....	.....	.....	60
1,118 81	1,441 46	1,765 83	1,505 54	1,791 12	1,524 82	
825 24	1,008 68	918 75	1,111 63	916 93	1,035 79	61
924 56	1,196 12	1,077 98	1,215 90	1,006 98	1,183 98	62
9,292 98	10,240 66	9,139 69	9,785 20	9,349 73	10,285 03	63
.....	30 35	41 55	24 10	18 75	24 15	64
.....	.....	.....	.....	28 48	.....	65
797 09	821 18	2,061 19	540 74	561 86	500 99	66
858 82	922 49	1,030 87	987 82	946 59	1,001 25	67
2,753 74	2,557 28	3,104 69	2,649 90	2,976 43	2,557 23	68
127 68	67 45	154 48	68 40	161 31	68 59	69
42 73	32 99	75 10	30 22	70 22	54 21	70
1,484 28	1,360 05	1,733 72	1,425 06	1,792 05	1,609 73	71
491 49	441 77	484 45	540 87	337 82	497 31	72
2,988 78	2,756 44	2,793 87	2,573 23	2,960 78	3,204 02	73
96 82	83 12	89 65	26 89	60 56	136 37	74
53 70	52 98	71 40	46 28	59 34	37 40	75
23 61	22 55	3 25	19 28	19 08	22 51	76
1,458 28	793 81	1,509 65	841 38	861 75	834 33	77
Cr. 5,446 02	Cr. 5,641 16	Cr. 7,532 96	Cr. 5,441 58	Cr. 6,212 93	Cr. 6,108 60	78
.....	.....	.....	.....	.....	.....	79
5,021 28	5,537 49	5,219 60	5,443 93	5,661 79	5,970 44	80
2,876 55	2,774 88	2,614 92	2,885 68	2,507 67	3,112 05	81
13,216 11	15,784 21	14,554 75	13,130 72	15,628 59	17,589 43	82
1,583 60	1,407 06	1,090 33	1,185 31	1,461 98	1,346 20	83
274 42	249 91	342 23	262 23	366 63	227 21	84
97 62	95 97	93 20	87 80	98 66	105 95	85
.....	.....	.....	.....	.....	.....	86
.....	.....	.....	.....	.....	.....	87
5,696 64	6,406 42	6,041 42	6,307 24	6,845 65	6,341 46	88
2,622 01	2,160 11	2,801 53	2,146 74	2,333 70	95 84	89
.....	.....	.....	.....	.....	.....	90
.....	.....	.....	.....	.....	.....	91
.....	.....	.....	.....	.....	.....	92
1,429 45	222 49	175 88	65 52	1,129 23	156 49	93
311 37	190 90	286 42	193 30	330 60	190 00	94
.....	.....	.....	.....	.....	.....	95
.....	.....	.....	.....	.....	.....	96
916 63	649 62	732 45	762 64	680 17	683 46	97
10 00	68 27	32 83	47 00	.....	44 00	98
Cr, 55 55	Cr. 36 76	Cr. 317 78	98 74	530 32	Cr. 312 70	99
30 00	Cr. 230 30	.....	.....	7 50	.....	100
.....	.....	.....	.....	.....	.....	101
45 00	40 00	19 18	1 94	77 50	61 28	102
.....	Cr. 95 63	18 00	Cr. 13 25	309 00	.....	103
.....	.....	.....	.....	.....	.....	104
.....	.....	.....	.....	.....	.....	105
50,848 91	51,971 40	50,462 29	49,020 86	53,884 72	52,555 90	

Comparative Statement of Expenses by Months, November, 1911,

No.	Traffic Expenses.	1912 September.	1913 September.	1912 October.	1913 October.
		$ c.	$ c.	$ c.	$ c.
53	Superintendence	749 98	856 06	795 80	835 32
54	Outside Agencies	1 86	1 24	31	1 26
55	Advertising	611 21	118 25	107 50	89 60
56	Traffic Associations	.....	8 92	.....	9 08
57	Fast Freight Lines	.....	.....	.....	.....
58	Industrial and Emigration Bureaus	408 53	131 97	119 06	61 00
59	Stationery and Printing	314 96	34 48	79 33	111 65
60	Other Expenses	.....	.....	.....	.....
	Totals	2,086 54	1,150 92	1,102 00	1,107 91
	Transportation Expenses.				
61	Superintendence	737 21	1,128 72	896 92	1,032 72
62	Despatching Trains	1,059 51	1,111 30	1,072 43	1,099 34
63	Station Employees	9,433 69	10,300 49	9,677 85	10,562 27
64	Weighing and Car Service Associations	21 69	25 65	51 32	25 61
65	Coal and Ore Docks	.....	.....	.....	.....
66	Station Supplies and Expenses	783 67	103 26	1,213 74	663 30
67	Yardmasters and their Clerks	978 32	1,003 13	905 29	1,010 14
68	Yard Conductors and Brakemen	2,542 07	2,439 90	2,610 74	2,663 41
69	Yard Switch and Signal Tenders	172 65	66 50	156 56	101 84
70	Yard Supplies and Expenses	29 45	70 33	69 45	60 87
71	Yard Enginemen	1,473 56	1,537 46	1,470 88	1,595 21
72	Engine-house Expenses—Yard	510 79	519 67	533 90	478 01
73	Fuel for Yard Locomotives	2,581 87	2,829 03	2,747 81	3,126 42
74	Water for Yard Locomotives	120 48	64 84	47 08	77 90
75	Lubricants for Yard Locomotives	60 94	48 35	65 10	49 07
76	Other Supplies for Yard Locomotives	19 49	62 98	18 19	27 56
77	Operating Joint Yards and Terminals —Dr.	Cr. 63 79	1,102 01	806 24	671 58
78	Operating Joint Yards and Terminals —Cr.	Cr. 5,719 78	Cr 5,845 76	Cr. 5,784 15	Cr 5,857 24
79	Motormen	.....	.....	.....	.....
80	Road Enginemen	5,621 83	5,723 55	5,664 13	6,201 94
81	Engine-house Expenses—Road	2,488 75	3,180 16	2,554 10	3,234 12
82	Fuel for Road Locomotives	15,158 37	15,442 01	16,674 54	23,955 32
83	Water for Road Locomotives	1,520 37	1,277 04	1,056 21	1,608 97
84	Lubricants for Road Locomotives	305 84	235 32	301 80	193 71
85	Other Supplies for Road Locomotives	89 96	97 36	94 96	140 18
86	Operating Power Plants	.....	.....	.....	.....
87	Purchased Power	.....	.....	.....	.....
88	Road Trainmen	6,512 68	6,333 50	6,461 23	6,573 26
89	Train Supplies and Expenses	2,893 09	1,726 48	2,320 08	2,840 92
90	Interlockers, Block and other Signals—Operations	.....	.....	.....	.....
91	Crossing, Flagmen and Gatemen	.....	.....	.....	.....
92	Drawbridge Operation	.....	.....	.....	.....
93	Clearing Wrecks	373 50	Cr. 18 95	255 57	180 94
94	Telegraph and Telephone—Operation	325 94	224 03	210 75	254 70
95	Operating Floating Equipment	.....	.....	.....	.....
96	Express Service	.....	.....	.....	.....
97	Stationery and Printing	1,020 13	716 33	590 93	298 38
98	Other Expenses	.....	45 00	178 15	24 75
99	Loss and Damage—Freight	227 10	188 48	123 45	Cr. 62 38
100	Loss and Damage—Baggage	Cr. 25 00	5 50	.....	.....
101	Damage to Property	.....	.....	.....	.....
102	Damage to Stock on Right-of-Way	17 43	100 00	646 63	28 47
103	Injuries to Persons	608 25	.....	360 30	150 73
104	Operating Joint Tracks—Dr.	.....	.....	.....	.....
105	Operating Joint Tracks—Cr.	.....	.....	.....	.....
	Totals	51,880 06	51,843 67	54,052 18	63,012 02

to October, 1913---Continued.

1912 Total.	1913 Total.	Increase.	Decrease.	Net Increase.	Net Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
9,579 62	9,864 54	284 92	.....	.....	.....	53
487 34	133 16	.....	354 18	.....	.....	54
3,625 24	2,665 26	.....	959 98	.....	.....	55
15 00	81 15	66 15	.....	.....	.....	56
.....	.....	.....	.....	.....	.....	57
1,972 25	1,771 25	.....	201 00	.....	.....	58
1,781 77	2,342 00	560 23	.....	.....	.....	59
.....	.....	.....	.....	.....	.....	60
17,461 22	16,857 36	911 30	1,515 16	.....	603 86	
10,328 86	11,978 05	1,649 19	.....	.....	.....	61
12,125 82	13,942 29	1,816 47	.....	.....	.....	62
113,820 41	120,228 02	6,407 61	.....	.....	.....	63
277 86	404 57	126 71	.....	.....	.....	64
Cr. 829 02	.....	.....	Cr. 829 02	.....	.....	65
15,888 23	13,258 83	.....	2,629 40	.....	.....	66
10,423 68	12,149 28	1,725 60	.....	.....	.....	67
35,764 17	32,531 20	.....	3,232 97	.....	.....	68
1,977 27	1,245 07	.....	732 20	.....	.....	59
798 72	782 55	.....	16 17	.....	.....	70
20,123 48	18,193 34	.....	1,930 14	.....	.....	71
7,147 38	6,482 20	.....	665 18	.....	.....	72
36,741 52	37,082 83	341 31	.....	.....	.....	73
873 46	1,091 06	217 60	.....	.....	.....	74
717 74	604 49	.....	113 25	.....	.....	75
270 81	354 39	83 58	.....	.....	.....	76
16,519 57	7,058 75	.....	9,460 82	.....	.....	77
Cr. 68,554 73	Cr. 69,253 67	Cr. 698 94	.....	.....	.....	78
.....	.....	.....	.....	.....	.....	79
67,803 69	70,867 09	3,063 40	.....	.....	.....	80
33,052 99	41,515 36	8,462 37	.....	.....	.....	81
204,242 47	222,774 37	18,531 90	.....	.....	.....	82
17,884 13	15,901 34	.....	1,982 79	.....	.....	83
3,930 29	3,213 51	.....	716 78	.....	.....	84
1,196 08	1,450 65	254 57	.....	.....	.....	85
.....	.....	.....	.....	.....	.....	86
.....	.....	.....	.....	.....	.....	87
78,142 12	80,678 91	2,536 79	.....	.....	.....	88
28,742 14	20,160 87	.....	8,581 27	.....	.....	89
.....	.....	.....	.....	.....	.....	90
.....	.....	.....	.....	.....	.....	91
.....	.....	.....	.....	.....	.....	92
5,007 56	1,328 31	.....	3,679 25	.....	.....	93
2,319 27	2,496 10	176 83	.....	.....	.....	94
.....	.....	.....	.....	.....	.....	95
.....	.....	.....	.....	.....	.....	96
12,012 26	8,505 90	.....	3,506 36	.....	.....	97
365 33	659 60	294 27	.....	.....	.....	98
2,628 10	2,301 37	.....	326 73	.....	.....	99
22 50	Cr. 45 22	.....	67 72	.....	.....	100
4 00	.....	.....	4 00	.....	.....	101
942 72	276 70	.....	666 02	.....	.....	102
4,252 45	261 97	.....	3,990 48	.....	.....	103
.....	.....	.....	.....	.....	.....	104
.....	.....	.....	.....	.....	.....	105
676,963 33	680,480 08	44,989 26	41,472 51	3,516 75	.....	

Comparative Statement of Expenses by

No.	General Expenses.	1911 November.	1912 November.	1911 December.	1912 December.
		$ c.	$ c.	$ c.	$ c.
106	Salaries and Expenses of General Officers	2,108 52	2,788 00	1,078 19	1,662 04
107	Salaries and Expenses of Clerks and Attendants	2,728 57	3,708 06	2,587 06	3,001 75
108	General Office Supplies and Expenses	622 30	361 15	374 43	141 75
109	Law Expenses	586 75	400 00	617 08	415 00
110	Insurance	1,833 36	2,094 53	2,053 52	1,996 69
111	Relief Department Expenses	.....	.....	.....	.....
112	Pensions	.....	.....	.....	.....
113	Stationery and Printing	141 19	265 53	301 24	292 59
114	Other Expenses	13 64	10 00	33 12	60 88
115	General Administration Joint Tracks, Yards and Terminals—Dr.	.....	.....	.....	.....
116	General Administration Joint Tracks, Yards and Terminals—Cr.	.....	Cr. 20 95	.....	Cr. 34 62
	Totals	8,034 33	9,606 32	7,044 64	7,536 08

Comparative Statement of Expenses by

No.	General Expenses.	1912 April.	1913 April.	1912 May.	1913 May.
		$ c.	$ c.	$ c.	$ c.
106	Salaries and Expenses of General Officers	1,156 91	2,355 41	2,276 97	887 96
107	Salaries and Expenses of Clerks and Attendants	3,446 49	3,004 22	2,605 00	2,874 95
108	General Office Supplies and Expenses	357 78	408 49	291 29	159 24
109	Law Expenses	600 00	404 00	400 00	.....
110	Insurance	1,997 05	3,739 51	2,001 25	3,519 11
111	Relief Department Expenses	.....	.....	.....	.....
112	Pensions	.....	.....	.....	.....
113	Stationery and Printing	162 04	268 63	319 12	199 63
114	Other Expenses	218 28	10 00	29 90	40 00
115	General Administration Joint Tracks, Yards and Terminals—Dr.	.....	.....	.....	.....
116	General Administration Joint Tracks, Yards and Terminals—Cr.	.....	Cr. 23 11	.....	Cr. 23 57
	Totals	7,938 55	10,167 15	7,923 61	7,657 32

Comparative Statement of Expenses by

No.	General Expenses.	1912 September.	1913 September.	1912 October.	1913 October.
		$ c.	$ c.	$ c.	$ c.
106	Salaries and Expenses of General Officers	1,123 32	1,187 62	1,133 86	931 64
107	Salaries and Expenses of Clerks and Attendants	2,835 29	3,011 27	2,565 63	2,017 04
108	General Office Supplies and Expenses	322 66	322 73	595 11	502 90
109	Law Expenses	516 47	322 62	2,950 45	411 35
110	Insurance	2,357 67	3,519 11	1,961 02	3,525 58
111	Relief Department Expenses	.....	.....	.....	.....
112	Pensions	.....	.....	.....	.....
113	Stationery and Printing	194 59	153 29	373 47	367 82
114	Other Expenses	3 75	1,006 68	.....	156 80
115	General Administration Joint Tracks, Yards and Terminals—Dr	.....	.....	.....	.....
116	General Administration Joint Tracks, Yards and Terminals—Cr	Cr. 21 69	Cr. 22 95	Cr. 21 87	Cr. 21 94
	Totals	7,332 06	9,500 37	9,557 67	7,891 19

Months, November, 1911 to October, 1913---Continued.

1912 January.	1913 January.	1912 February.	1913 February.	1912 March.	1912 March.	No
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1,031 65	2,500 75	2,197 05	1,151 17	1,199 81	1,116 58	106
2,588 32	3,237 12	2,970 57	2,979 23	2,513 32	2,783 67	107
525 85	409 36	277 50	650 60	374 61	566 71	108
2,692 44	407 36	400 00	400 00	401 50	400 00	109
1,833 36	3,315 55	1,899 87	3,375 04	1,843 11	3,393 53	110
.....	.....	.....	.....	.....	.....	111
.....	.....	.....	.....	.....	.....	112
21 90	159 38	19 44	194 38	572 65	284 35	113
245 65	120 00	25 00	25 00	13 76	Cr. 49	114
.....	.....	.....	.....	.....	.....	115
.....	Cr. 22 63	.....	Cr. 22 06	.....	Cr. 23 20	116
8,939 17	10,126 89	7,789 43	8,735 36	6,918 76	8,521 15	

Months, November, 1911, to October, 1913---Continued.

1912 June.	1913 June.	1912 July.	1913 July.	1912 August.	1913 August.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1,056 28	1,175 78	1,139 91	1,125 90	2,193 19	2,291 24	106
2,689 28	2,926 04	2,679 47	2,945 13	2,640 77	2,736 60	107
481 68	343 29	357 16	395 42	598 66	460 30	108
400 52	401 00	400 00	400 00	480 72	400 00	109
1,997 05	3,523 31	1,997 05	3,519 11	2,033 08	3,550 83	110
.....	.....	.....	.....	.....	.....	111
.....	.....	.....	.....	.....	.....	112
149 50	138 97	721 98	163 91	197 30	404 88	113
62 00	101 50	50 00	.....	30	65 45	114
.....	.....	.....	.....	.....	.....	115
Cr. 134 38	Cr. 22 93	Cr. 22 27	Cr. 23 33	Cr. 21 56	Cr. 23 63	116
6,701 93	8,586 96	7,323 30	8,526 14	8,122 46	9,885 67	

Months, November, 1911, to October, 1913---Concluded.

1912 Total.	1913 Total.	Increase.	Decrease.	Net Increase.	Net Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
17,695 66	19,174 09	1,478 43	.....	.....	.....	106
32,849 85	35,225 08	2,375 23	.....	.....	.....	107
5,179 03	4,721 94	.....	457 09	.....	.....	108
10,445 93	4,361 33	.....	6,084 60	.....	.....	109
23,807 39	39,071 90	15,264 51	.....	.....	.....	110
.....	.....	.....	.....	.....	.....	111
.....	.....	.....	.....	.....	.....	112
3,174 42	2,893 36	.....	281 06	.....	.....	113
695 40	1,595 82	900 42	.....	.....	.....	114
.....	.....	.....	.....	.....	.....	115
Cr. 221 77	Cr. 284 92	Cr. 63 15	.....	.....	.....	116
93,625 91	106,758 60	19,955 44	6,822 75	13,132 69	.....	

Statistics—Temiskaming and Northern Ontario Railway Commission

——	Passengers.	Revenue.
		$ c.
Number of passengers carried during year 1905.....	86,648	108,681 76
" " " " 1906.....	359,861	254,759 33
" " " " 1907.....	518,678	388,343 03
" " " " 1908.....	479,005	366,504 53
" " " " 1909.....	580,748	483,110 89
" " " " 1910.....	670,913	606,967 91
" " " " 1911.....	479,102	653,063 01
" " " " 1912.....	497,452	599,681 73
" " " " 1913.....	508,055	576,049 37
Totals.....	4,180,462	4,037,161 56

Number of passengers carried one mile, period 1905 to 1913, inclusive 165,561,975

——	Tons.	Revenue.
		$ c.
Number of tons of freight carried during year 1905 ...	99,192	121,530 46
" " " " " 1906 ...	273,749	230,552 63
" " " " " 1907 ...	393,589	390,894 29
" " " " " 1908 ...	484,444	471,203 41
" " " " " 1909 ...	498,645	756,141 66
" " " " " 1910 ...	624,820	852,886 46
" " " " " 1911 ...	564,120	974,678 33
" " " " " 1912 ...	562,734	929,464 66
" " " " " 1913 ...	674,942	906,476 16
Totals.....	4,176,235	5,633,828 06

Number of tons of freight carried one mile, period 1905 to 1913, inclusive 397,086,06

TRAFFIC AND MILEAGE STATISTICS.

Passenger Traffic.

1	Total passengers carried earning revenue	508,055
2	Number of passengers carried one mile	24,545,588
3	Number of passengers carried one mile—per mile of road	73,974
4	Average distance carried (miles)	48.31
5	Total passenger revenue	$576,049 37
6	Average amount received from each passenger	$1 11
7	Average receipts per passenger per mile (cents)	2.35
8	Total passenger train service revenue	$654,655 80
9	Passenger service train revenue per mile of road	$1,972 81
10	Passenger service train revenue per train mile	$1 40

Freight Traffic.

11	Number of tons of freight carried earning revenue	674,942
12	Number of tons carried one mile	76,837,521
13	Number of tons carried one mile per mile of road	231,570
14	Average distance haul of one ton (miles)	113.84
15	Total freight revenue	$912,572 63
16	Average amount received for each ton of freight	$1 35
17	Average amount received per ton per mile (cents)	1.19
18	Freight revenue per mile of road	$2,750 23
19	Freight revenue per train mile	$2 02

Total Traffic.

20	Operating revenue	$1,656,154 85
21	Operating revenue per mile of road	$4,991 27
22	Operating revenue per train mile	$1 93
23	Operating expenses	$1,477,550 01
24	Operating expenses per mile of road	$4,453 00
25	Operating expenses per train mile	$1 72
26	Net operating revenue	$178,604 84
27	Net operating revenue per mile of road	$538 60

Car Mileage.

28	Average number of passengers per car mile	9
29	Average number of passengers per train mile	52
30	Average number of passenger cars per train mile	5.35
31	Mileage of passenger cars	2,515,880
32	Mileage of loaded freight cars—north and east	2,846,214
33	Mileage of loaded freight cars—south and west	1,748,478
34	Mileage of empty freight cars—north and east	308,802
35	Mileage of empty freight cars—south and west	1,709,555
36	Average number of freight cars per train mile	15.27
37	Average number of loaded cars per train mile	9.80
38	Average number of empty cars per train mile	4.61
39	Average number of tons of freight per train mile	170.09
40	Average number of tons of freight per loaded car mile	17.34
41	Average mileage operated during year	331.81

Train Mileage

42	Mileage of revenue passenger trains	408,652
43	Mileage of revenue mixed trains	64,038
44	Mileage of revenue freight trains	387,693
45	Total revenue train mileage	860,383

Temiskaming and Northern Ontario Railway.

Tons One Mile—Twelve Months—November 1st, 1912, to October 31st, 1913.

Month.	Total Tonnage.	Tons, North Bound.	Tons, South Bound.	Tons, One Mile.
November 1912.....	49,896	31,988	17,908	5,798,438
December "	49,116	32,113	17,003	6,127,999
January 1913.....	69,155	34,662	34,493	7,765,347
February "	54,959	22,095	32,864	5,593,834
March "	67,878	26,462	41,416	7,209,574
April "	72,464	26,761	45,703	9,040,559
May "	50,813	25,166	25,647	6,162,858
June "	45,377	23,575	21,802	4,977,827
July "	48,629	26,764	21,865	5,718,645
August "	49,321	28,545	20,776	5,504,306
September "	55,792	31,730	24,062	5,875,789
October "	61,542	38,271	23,271	7,062,345
Totals.....	674,942	348,132	326,810	76,837,521

Average Wages Operating and Maintenance—Employees.

November 1st, 1912, to October 31st, 1913

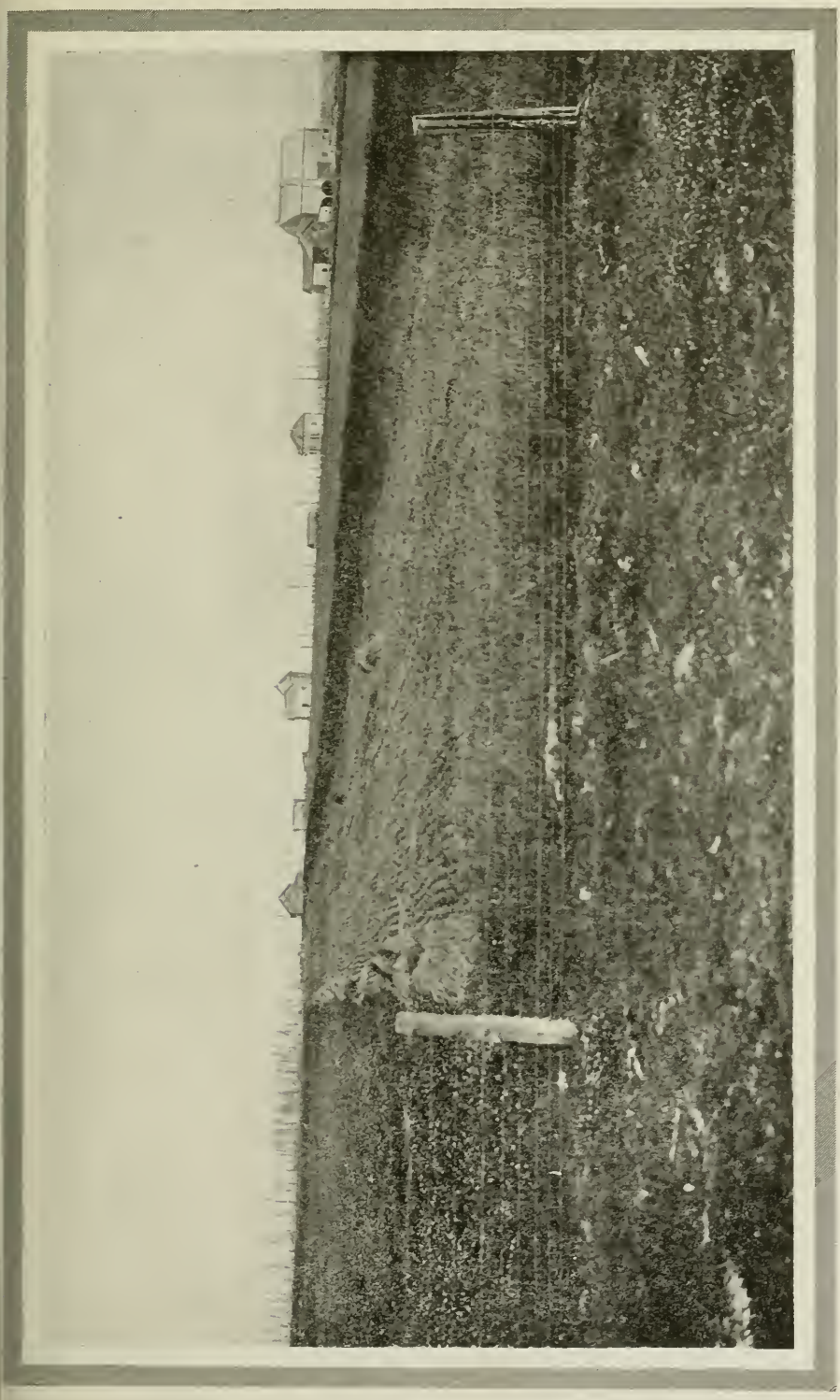
Class.	No.	Total days worked.	Total compensation.	Average daily compensation.
			$ c.	$ c.
General Officers.....	8	3,888	23,805 00	6 12
Other Officers.....	21	6,306	25,373 89	4 02
General Office Clerks	80	27,994	55,787 18	1 99
Station Agents.....	27	10,925	34,021 88	3 12
Other Station Men.....	140	44,211	78,543 46	1 78
Enginemen.....	22	14,020	59,398 16	4 24
Firemen	22	13,927	35,926 66	2 58
Conductors,.....	22	13,293	45,860 24	3 45
Other Trainmen.....	52	30,125	74,606 92	2 47
Machinists.....	20	7,175	25,037 42	3 49
Carpenters	38	12,956	37,272 29	2 88
Other Shopmen.....	167	57,262	124,857 40	2 18
Track Foremen.....	64	18,748	53,574 47	2 86
Other Trackmen	391	113,035	217,172 32	1 92
Switch Tenders, etc.....	2	549	1,350 00	2 46
Operators and Dispatchers.....	27	11,466	32,971 28	2 87
All Others.....	61	20,782	46,161 24	2 22
Totals.....	1,164	406,529	971,719 81	2 39

Equipment owned by Temiskaming and Northern Ontario Railway October 31st, 1913.

	Total authorized equipment.	Available for service.	Destroyed or transferred to other classes.	Capacity. Tractive Power. Pounds.	Valuation.	Total valuation carried in general ledger.
					$ c.	$ c.
STEAM LOCOMOTIVES.						
Class A 3	4	4	.....	56,320	.....	.....
Class B 4	4	4	.....	170,000	.....	.....
Class C 2	2	2	.....	26,488	.....	.....
Class C 3	30	30	.....	704,220	.....	.....
Class F 3	4	4	.....	121,600	.....	.....
Totals	44	44	.....	1,078,628	.....	749,775 72
PASSENGER EQUIPMENT.						
Passenger, 1st Class	14	14	.....	}	278,869 96	.....
Passenger, 2nd Class	21	15	6	}		
Combination	2	2	.....	.....	.....	.....
Parlor-Cafe	3	3	.....	.....	64,811 76	.....
Baggage and Express	7	5	2	}	67,070 27	.....
Mail and Express	6	5	1	}		
Private	3	3	.....	.....	39,866 11	.....
Totals	56	47	9	.....	.....	450,618 10
FREIGHT EQUIPMENT.						
Box	150	147	3	.....	179,908 40	.....
Stock	10	10	.....	.....	8,989 20	.....
Vans	24	23	1	.....	40,846 95	.....
Flats	500	465	35	.....	406,609 56	.....
Totals	684	645	39	.....	.....	636,354 11
MAINTENANCE OF WAY AND STRUCTURES EQUIPMENT.						
Pile Driver	1	1	.....	.....	11,772 35	.....
Snow Plows	4	3	1	.....	19,310 20	.....
Flangers	3	3	.....	.....	4,505 21	.....
Steam Shovels	2	2	.....	.....	17,249 63	.....
Wrecking Cranes	2	2	.....	.....	29,678 00	.....
Auxiliaries Complete	2	2	.....	.....	} 4,565 67	.....
Road Cabin Cars	2	2	.....	.....		
Lidgerwood Unloaders	3	3	.....			
Side Ballast Plows	6	6	.....			
Centre Ballast Plows	3	3	.....			
Jordan Ballast Spreader	1	1	.....	.....	26,650 49	.....
Pile Driver Tank Car	1	1	.....			
Mahoney Ditching Machine	1	1	.....			
Centre Ballast Spreader	1	1	.....	.....	1,000 85	.....
American Railroad Ditcher	1	1	.....	.....	8,777 73	.....
Cinder Cars, Steel	12	12	.....	.....	18,485 32	.....
Hart Convertible Cars	17	17	.....	.....	17,500 00	.....
Exhibition Car	1	1	.....	.....	.....	.....
Boarding Cars	6	6	.....	.....	.....	.....
Hand Cars	120	114	6			
Push Cars	86	77	9			
Motor Cars	2	2	.....	.....	7,379 11	.....
Velocipedes	20	6	14			
Steam Shovel	1	1	.....			
Totals	298	268	30	.....	.....	166,874 56
Total Valuation of Equipment						2,003,622 49

Freight Traffic Movement—12 Months ending October 31st, 1913.

Commodities.	Freight originating on T. & N. O.	Freight received from foreign roads.	Total Freight Tonnage.	
	Whole Tons.	Whole Tons.	Whole Tons.	Per Cent.
Products of Agriculture—				
Grain	1,587	5,582	7,159	1.062
Flour	550	6,008	6,558	.972
Other mill products	867	1,890	2,757	.408
Hay	2,672	8,707	11,379	1.686
Tobacco	.....	.....	.....	.....
Cotton	.....	.....	.....	.....
Fruit and Vegetables	1,330	5,491	6,821	1.010
Other products of Agriculture	47	.....	47	.007
Total	7,053	27,678	34,731	.....
Products of Animals—				
Live Stock	1,214	1,818	3,032	.449
Dressed Meats	59	1,875	1,934	.286
Other packing house products	18	573	591	.087
Poultry, Game, Fish and Eggs	12	126	138	.020
Wool	.....	.....	.....	.....
Hides and Leather	20	.....	20	.002
Other products of Animals	72	137	209	.030
Total	1,395	4,529	5,924	.....
Products of Mines—				
Anthracite Coal	9,782	26,856	36,638	5.429
Bituminous Coal	12,303	86,933	99,236	14.703
Coke	227	1,083	1,310	.194
Ores	66,402	.....	66,402	9.839
Stone, Sand and other like articles	15,130	1,651	16,781	2.487
Other Products of Mines	307	294	601	.089
Total	104,151	116,817	220,968	.....
Products of Forests—				
Lumber	181,443	6,275	187,718	27.811
Other Products of Forests	97,197	335	97,532	14.451
Total	278,640	6,610	285,250	.....
Manufactures—				
Petroleum and other Oils	420	3,059	3,479	.516
Sugar	50	189	239	.036
Iron, Pig and Bloom	35	441	476	.071
Iron and Steel Rails	4,521	8,046	12,567	1.862
Other Castings and Machinery	2,788	10,554	13,342	1.977
Bar and Sheet Metal	118	1,060	1,178	.175
Cement, Brick and Lime	4,014	15,983	19,997	2.963
Agricultural Implements	10	48	58	.008
Wagons, Carriages, Tools, etc	137	63	200	.029
Wines, Liquors and Beers	516	2,225	2,741	.407
Household Goods and Furniture	291	165	456	.068
Other Manufactures	1,885	4,928	6,813	1.009
Total	14,785	46,761	61,546	.....
Merchandize	27,792	31,611	59,403	8.802
Miscellaneous—				
Other Commodities not mentioned above	4,356	2,764	7,120	1.055
Totals Tonnage	438,172	236,770	674,942	100.000



Farm of Wm. Cart, Armstrong, 1913.

STATEMENT OF LAND PURCHASED BY T. & N. O. RAILWAY

November 1st, 1912, to October 31st, 1913.

Right of Way, Elk Lake Branch:

Jos. H. Patterson, Ottawa, Ont.	
South ½, Lot 4, Con. 6, Township Barber, 9.69 acres	$100 90
J. E. Chevier, Cornwall, Ont.	
North ½, Lot 6, Con. 6, Township Barber, 6 acres	60 00
Chas. Mickle, Gravenhurst, Ont.	
South ½, Lot 12, Con. 6, Township Cane, 6.21 acres	62 10
Ebenezer Brown, Ottawa, Ont.	
North ½, Lot 5, Con. 6, Township Barber, 6.15 acres	65 00

Right of Way, Cochrane Diversion:

J. Milway.	
North ½, Lot 4, Con. 5, Township Lamarche, 4.6 acres	100 00
Jos. Bellevue, Cochrane, Ont.	
North ½, Lot 5, Con. 6, Township Lamarche, 3.7 acres	92 50
E. D. Chamberlain, Cochrane, Ont.	
South ½, Lot 5, Con. 6, Township Lamarche, 7.1 acres	106 50
D. Gauthier, Cochrane, Ont.	
North ½, Lot 5, Con. 5, Township Lamarche, 1.1 acres	22 00

Right of Way, Iroquois Falls Branch:

R. S. Bradley, Ottawa, Ont.	
North ½, Lot 3, Con. 3, Township Calvert, 5.4 acres	100 00
Mrs. Martha Jane Davis, Toronto, Ont.	
South ½, Lot 10, Con. 1, Township Calvert, 3.4 acres	85 00
Mrs. Jane Seager, Toronto, Ont.	
South ½, Lot 10, Con. 1, Township Calvert, 1.9 acres	47 50
Mrs. J. Armstrong, Uxbridge, Ont.	
South ½, Lot 7, Con. 2, Township Calvert, 5.3 acres	106 00
Wm. Galbraith, Montreal, Que.	
North ½, Lot 2, Con. 3, Township Calvert, 5.6 acres	150 00
Treasurer of Ontario, Toronto, Ont.	
South ½, Lot 7, Con. 2, Township Calvert, 5.4 acres	5 40
G. W. Ames, Bay City, Mich., U.S.A.	
South ½, Lot 1, Con. 4, Township Calvert, 6.5 acres	250 00
G. W. Ames, Bay City, Mich., U.S.A.	
South ½, Lot 1, Con. 4, Township Calvert, 3 acres	120 00
G. W. Ames, Bay City, Mich., U.S.A.	
South ½, Lot 1, Con. 4, Township Calvert, 17 acres	850 00

Right of Way, Widdifield Diversion:

Treasurer of Ontario, Toronto, Ont.	
Right of way through Townships of Blyth, Merrick, Notman, Stewart and Osborne, 190.06 acres	190 06
Treasurer of Ontario, Toronto, Ont.	
Amount due Government on West ½, Lot 23, Con. 3, Township Widdifield	53 75

For North Bay Shops:

John and Frederick Granger, North Bay, Ont.	
Lot 71, Worthington Street, North Bay, Ont.	1,350 00
Mrs. Anna Dora Dart, Toronto, Ont.	
Lot 39, McIntyre Street, North Bay, Ont.	1,857 58
Mrs. Hannah Dewan, North Bay, Ont.	
Lot 72, Worthington Street, North Bay, Ont.	1,000 00

Miscellaneous:

John Orr, Kingston, Ont.	
South ½, Lot 6, Con. 6, Township Henwood, 13.7 acres	300 00
J. M. Garland, Dwyer Hill P.O., Ont.	
South ½, Lot 11, Con. 2, Matheson Townsite, 4 acres	25 00
J. H. and Henry Leng, New Liskeard, Ont.	
Block L, Lots 1 and 2, Plan M61, Town of New Liskeard, Ont., 2 acres	4,500 00
E. H. Winlow, Heaslip, Ont.	
South ½, Lot 5, Con. 2, Township Evanturel, .05 acres	50 00
Thos. Muir.	
North ½, Lot 5, Con. 5, Township Pacaud	106 00
Herman H. Cook, Thornloe, Ont.	
North ½, Lot 8, Con. 5, Township Cane, 1.9 acres	40 00
Robert Berger, McCool P.O., Ont.	
North ½, Lot 12, Con. 5, Township Henwood, 1.9 acres	40 00
Treasurer of Ontario, Toronto, Ont.	
Lot 10, Con. 6, Township German, 16.5 acres	16 50
Treasurer of Ontario, Toronto, Ont.	
Lot 10, Con. 6, Township German, Barber's Bay	155 33
Total	$12,007 12

TOWNSITES ACCOUNT.

Statement of Lots Sold—Townsites.—Nov. 1st, 1912, to Oct. 31st, 1913.

Townsite.	Lots sold.	Amount paid.	Balance due.
Timagami	1	$12 25	
Cobalt	60	2,090 00	$4,360 00
Englehart	5	287 50	262 50
Matheson	9	207 50	932 50
Monteith	12	335 00	260 00
Porquis Junction	13	378 00	1,472 00
Cochrane Annex	87	7,660 00	1,575 00
Cochrane	40	2,755 50	1,577 00
Totals	227	$13.725 75	$10,439 00

STATEMENT—RECEIPTS AND EXPENDITURES

TOWNSITES ACCOUNT

November 1st, 1912, to October 31st, 1913

Debit.		Credit.	
Cash in Bank of Ottawa, Nov. 1st 1913	$39,011 80	Cash in Bank of Ottawa, Oct. 31st, 1913	$59,155 56
Cash paid on lots sold	13,725 75	Disbursements	50 00
Interest paid on lots sold	11 02		
Deferred payments on lots sold previous to Nov. 1, 1912	4,523 56		
Interest on deferred payments	769 03		
Interest on deposits	1,164 40		
Total	$59,205 56		$59,205 56

TEMISKAMING AND NORTHERN ONTARIO RAILWAY

Statement of Materials and Supplies on Hand October 31st, 1913.

Shop Stock—North Bay.

Air brake supplies	$1,977 20
Wheels	4,634 64
Bolts, screws, etc.	3,168 42
Building material	1,274 74
Coach fittings	9,854 75
Castings, iron and steel	7,561 61
Couplers and parts	2,239 75
Forgings	1,027 26
Telegraph and telephone material	1,369 43
Electrical material	1,382 16
Glass	457 09
Hardware	752 45
Castings, brass	6,040 05
Lamps and fittings	998 74
Locomotive parts, finished	4,898 87
Lumber	19,797 67
Metals	287 79
Miscellaneous	2,492 02
Water service material	32 58
Paints and painters' tools	1,181 60
Pipes and fittings	3,591 58
Rubber hose	602 01
Commissary	112 31
Springs	2,564 40
Iron and steel	3,310 01
Steam shovel, pile driver and lidgerwood parts	603 81
Machinery and tools	1,522 97
Track material and tools	28,100 76
Chemist and surgical supplies	261 79
	$112,098 46

Englehart.

Air brake supplies	$120 37
Bolts, nuts and screws	343 26
Coach fittings	57 36
Castings, iron and steel	556 01
Couplers and parts	302 29
Telegraph and telephone material	3 47
Electrical material	71 86
Glass	53 17
Hardware	34 30
Castings, brass	105 65
Lamps and fittings	103 94
Metals	25 90
Miscellaneous	130 88
Paints and painters' tools	3 95
Pipe and pipe fittings	271 88
Hose and rubber	242 97
Iron and steel	67 36
Machinery and tools	51 65
Chemical and surgical supplies	4 10
Wheels	6,181 50
	$8,731 87

Timmins.

Air brake supplies	$ 17 91
Bolts, nuts and screws	7 29
Coach fittings	32 01
Castings, iron and steel	121 03
Couplers and parts	11 65
Forgings	4 78
Electrical material	5 05
Lamp and fittings	8 03
Locomotive parts, finished	1 89
Miscellaneous	9 30
Paints and painters' tools	16
Pipe and pipe fittings	10 97
Hose and rubber	21 70
Machinery and tools	4 83
Chemical and surgical supplies	16
Wheels	214 00
	$470 77

Cochrane.

Air brake supplies	$ 3 31
Bolts, nuts and screws	201 66
Coach fittings	21 85
Castings, iron and steel	202 21
Couplers and parts	67 52
Forgings	59 00
Telegraph and telephone material	96
Electrical supplies	15 47
Hardware	3 84
Glass	9 83
Lamps and fittings	17 15
Locomotive parts, finished	6 38
Metals	26
Miscellaneous	73 38
Water service material	45
Paints and painters' tools	2 70
Pipe and pipe fittings	40 88
Hose and rubber	42 25
Springs	28 17
Machinery and tools	9 97
Chemical and surgical supplies	80
Wheels	97 00
	$905 04

Summary.

North Bay	$112,098 46
Englehart	8,731 87
Timmins	470 77
Cochrane	905 04
Total on hand, October 31st, 1913	$122,206 14
Less material not vouchered	3,363 74
Total	$118,842 40

Stationery.

North Bay	$4,966 17

Oil and Waste.

North Bay	$1,216 79	
Englehart	635 87	
Timmins	103 36	
Cochrane	365 55	
		2,321 57

Ties.

No. 1 and 2, 64,681	$20,697 92	
Culls, 16,454	1,974 48	
		22,672 40

Ice.

North Bay	$477 60	
Timagami	34 00	
Englehart	24 00	
		535 60

Anthracite Coal.

Anthracite coal on hand	5,633 62

Bituminous Coal.

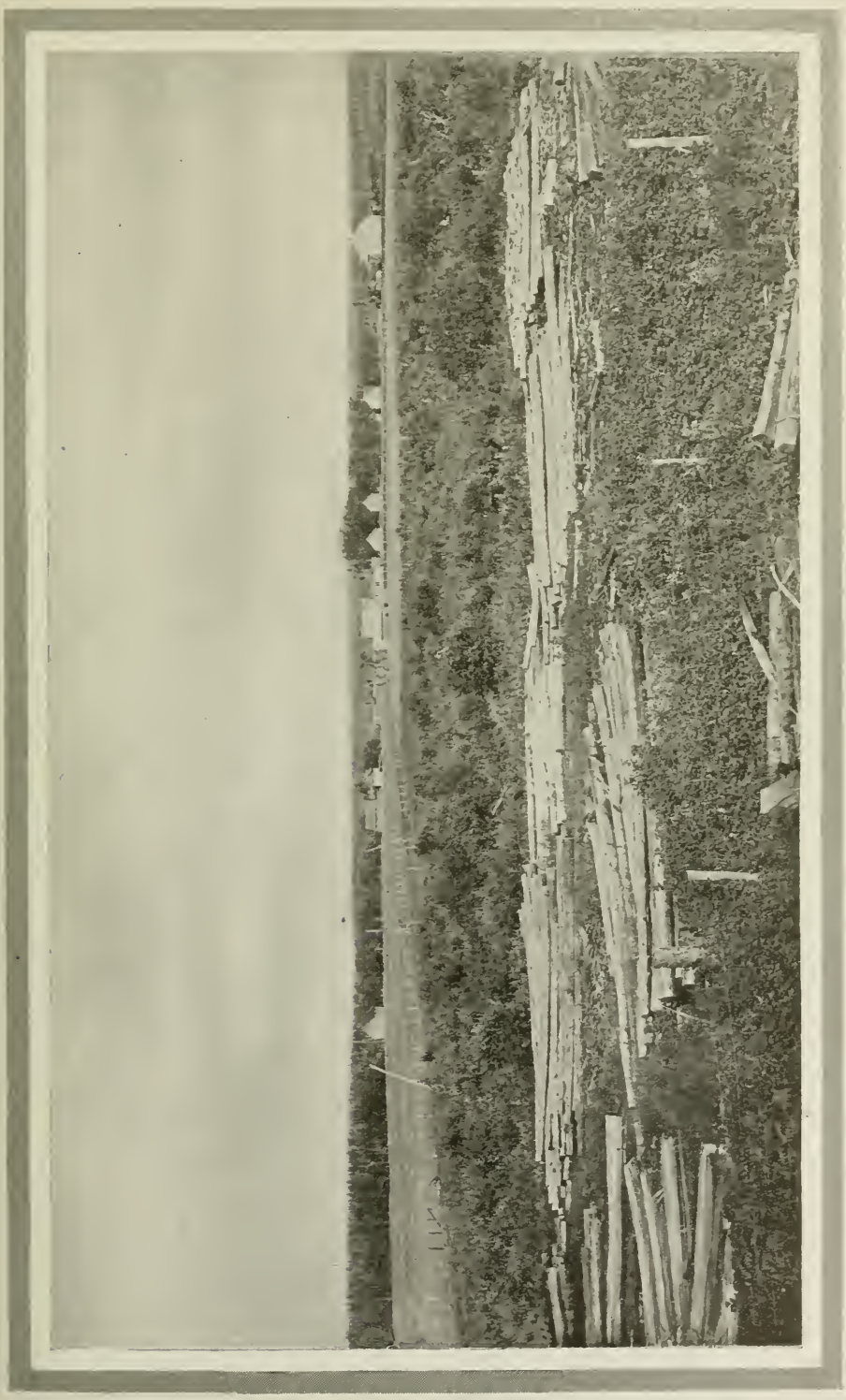
Bituminous coal on hand	95,952 82

Rails.

Rails on hand	61,900 41

Ballast Pit Operations.

Material in ballast pit operations	59,510 48
Total value of material on hand	$372,335 47



Farm of Wm. Park, 1913.

Statement of Wages Paid Employees Year Ended October 31st, 1913.

Office of Secretary-Treasurer.

McGee, A. J.	Secretary-Treasurer	$3,550 00	
Downing, A.	Stenographer	770 00	
Odlum, A. B.	"	770 00	
Ramsay, V.	"	560 00	
Murphy, J.	Mail Clerk	80 00	
Reesor, G.	Filing Clerk	330 00	
Legarde, H.	Mail Clerk	233 87	
McNiece, H.	Filing Clerk	300 00	
Whiteside. W.	Mail Clerk	26 67	
			$6,620 54

Office of Accountant.

Macdonald, H. F.	Accountant	$1,900 00	
May, E N.	Clerk	1,130 00	
Hamilton, D.	"	920 00	
Lockington, J.	"	765 00	
Bemister, M.	"	450 00	
Saunderson, G. S.	"	710 00	
Pratt, A. B.	"	1,650 00	
Hicks, A. M.	Stenographer	685 00	
Robinson, S.	"	316 67	
Mack, R. F.	"	254 00	
Jones, R. V.	Clerk	166 13	
			$8,946 80

Office of Mining Engineer.

Cole, A. A.	Mining Engineer	$3,300 00	
Roach, E.	Stenographer	706 33	
Tittensor, E.	"	73 67	
			$4,080 00

Office of Superintendent of Traffic.

Griffin, W. A.	Superintendent of Traffic	$2,950 00	
Faught, S. J.	Chief Clerk	1,025 00	
Brown, C. F.	Stenographer	695 00	
Giroux, C.	Clerk	600 00	
Newell, K.	Stenographer	590 00	
Latulippe, R.	Clerk	25 00	
Beaton, W.	"	292 09	
Flannery, W. A.	"	18 55	
Hooey, L.	"	1 61	
Newell, M.	Stenographer	10 00	
Bunyan, E.	Clerk	32 62	
			$6,239 87

Paymaster's Office.

Ferguson, C. L.	Paymaster	$1,890 00	
Cousineau, L.	Clerk	710 00	
			$2,600 00

Traffic Accountant's Office.

Mitchell, A. R. H.	Traffic Accountant	$2,070 00	
Willis, J. B.	Chief Clerk	1,170 00	
Milne, W. B.	Clerk	800 00	
McCausland, J.	"	600 00	
Brennan, J. B.	"	710 00	
Bain, J.	"	121 29	
Peel, R.	"	620 00	
McIntyre, W. H.	"	806 00	
Brown, M.	"	216 93	
Maas, L.	"	250 16	
Brockway, H.	"	740 00	
Lavery, T. H.	"	710 00	
Connolly, R. R.	"	190 16	
Keeler, S.	"	650 00	
Doidge, M.	"	506 19	
King, R.	Stenographer	650 00	
Gregory, K.	"	508 23	
Smith, G.	Clerk	320 00	
Cavanagh, H.	"	11 25	
Clarke, E.	"	272 94	
Oullette, T.	"	129 03	
McKeown, G.	"	147 00	
Salmon, A.	"	181 00	
Knight, J. R.	"	55 00	
			$12,435 68

Travelling Auditors.

Maund, W. H.	Travelling Auditor	$1,640 00	
McGee, H. H.	" "	1,210 00	
			$2,850 00

Superintendents' Accountant's Office.

Gracey, T. J.	Accountant	$1,350 00	
Collins, A. J.	Clerk	144 67	
Vandecar, J. B.	"	176 78	
Hansford, E. M.	Stenographer	491 00	
Sherman, E. L.	Clerk	570 00	
McIntosh, R.	"	503 22	
Bain, J.	"	576 77	
Cavanagh, H.	"	338 57	
Newell, M.	Stenographer	19 50	
			$4,170 51

Land Department.

Lee, G. W.	General Agent	$2,070 00	
Graham, G.	Clerk	670 00	
Bauldry, W. J.	Townsite Inspector	1,200 00	
Palmer, G.	Clerk	637 50	
Gregory, T.	"	60 00	
Townsite Laborers	"	874 89	
			$5,512 39

General Freight and Passenger Department.

Parr, A. J.	G. F. and P. A.	$2,140 00	
Harper, W. J.	Chief Clerk	1,420 00	
Thomas, T. R.	Clerk	900 00	
Jones, W.	"	620 00	
Kelly, T.	"	500 00	
Gregoire, T.	"	380 00	
Alford, E.	Stenographer	281 77	
Milligan, M.	"	515 00	
Jessup, A.	"	298 66	
Banks, E. C.	Clerk	960 00	
McLeod, R.	"	320 00	
Crummy, A.	Stenographer	220 65	
Gauthier, J.	Office Boy	95 97	
Elston, E.	" "	12 50	
			$8,664 55

Train Despatchers.

Campbell, J. J.	Chief Despatcher	$1,020 06	
Lamb, R. L.	Despatcher	1,886 46	
Chatterton, C. D.	"	2,006 27	
Workman, R.	"	1,967 64	
Smith, R. B.	"	1,565 28	
Trowhill, R. T.	"	1,015 34	
Roberts, C. A.	Operator	46 07	
LeGallais, F. G.	"	305 05	
			$9,812 17

Train Master's Office.

Ryan, S. H.	Train Master	$1,950 00	
Gregory, T.	Stenographer	514 40	
Cavanagh, H.	"	8 71	
Ansell, H.	"	82 66	
Lamb, R. L.	Train Master	86 94	
			$2,642 71

Purchasing and Stores Department.

Graham, W. A.	P. A. and Storekeeper	$2,200 00	
Alford, G. B.	Chief Clerk	1,106 25	
Freeman, A.	Clerk	1,006 00	
Ansell, J. J.	"	720 00	
Craven, W.	"	62 00	
Buchanan, W.	Stenographer	83 38	
Vallaint, E. R.	Clerk	668 00	
Sale, T.	Storeman	1,155 00	
Dignan, J. C.	"	716 00	
Depledge, F.	"	716 00	
Sweezey, S. B.	"	53 12	
Cavanagh, A. W.	Tie Inspector	979 81	
English, W.	" "	874 25	
Wissler, J. S.	Storeman	196 88	
Tarsey, S. G.	Clerk	664 00	
Donegan, E. J.	Stenographer	495 81	
Bigg, J. E.	Storeman	350 00	
Houldsworth, E.	"	6 66	
Sale, A.	Clerk	271 33	
Daly, G. L.	Storeman	117 74	
Valliant, J.	"	58 06	
Watkin, W.	Stockkeeper, Englehart	986 00	
			$13,486 29

Official Cars.

Saunders, C. E.	Porter	$397 50	
Duncan, G.	"	58 62	
Thomas, W. H.	"	15 79	
Brewster, L.	"	422 50	
Gillespie, C.	"	17 33	
McDuff, A.	"	5 00	
Brown, E.	"	24 43	
Charney, L. F.	"	59 13	
Schneider, J.	"	20 00	
Redding, J.	"	33 00	
Beaton, W.	"	4 35	
Edwards, R.	"	4 35	
			$1,062 00

Janitors, Office Building.

Hume, J.	Janitor	$840 00	
Archambeault, H.	"	14 00	
Colbon, W.	"	31 61	
			$885 61

Constables.

Swan, R.	Constable	$900 00	
Langlois, J. G.	Special Agent	128 80	
			$1,028 80

Toronto Freight Shed.

Maxwell, W. J.	Inspector	$120 00	
			$120 00

Freight Office, North Bay.

Baker, C. O.	Agent	$1,605 00	
Teskey, H. W.	Chief Clerk	1,044 83	
King, A. T.	Cashier	815 00	
Knapp, E. A.	Accountant	735 00	
Forrest, W.	"	735 00	
Sullivan, M.	Clerk	713 87	
Fishlock, A. F.	Biller	710 00	
Ashford, S.	Clerk	441 77	
Gerrie, M.	"	660 00	
Williams, F.	"	23 33	
Nugent, P.	Stenographer	586 98	
Kelland, F.	Clerk	42 00	
Bagg, W. A.	"	25 08	
Forrest. W. M.	"	320 00	
Ritchie, W.	"	104 35	
Latulippe, R.	"	161 33	
Farmer, C.	"	449 26	
Bently, J.	"	29 40	
McGirr, N.	"	80 68	
Dickey, E.	"	2 50	
Fisher, G.	Messenger	8 06	
Fitzmaurice, I.	Clerk	23 22	
Saunders, L.	Messenger	75 00	
Washburn, L.	Stenographer	28 64	
Ashford, T. R.	Clerk	22 58	
Simms, A.	"	1 83	
Knight, J. R.	"	4 58	
Elliott, J.	"	13 50	
Kemp. G.	"	46 13	
Gibson, R.	"	28 22	
			$9,537 14

Freight Shed, North Bay.

Sharvell, F. W.	Foreman	$815 00	
Rogers, A. E.	Assistant	467 28	
Dugard, W.	Checker	660 90	
Webber, S.	"	680 00	
Kersey, H.	"	414 19	
Demeza, A.	"	376 66	
Johnson, H.	"	26 66	
Moulder, T.	"	185 04	
Maxwell, W. J.	A. Foreman	214 64	
Smith, A.	Checker	245 00	
James, V.	"	220 00	
Griffiths, G.	"	217 68	
Ashford, S.	A. Foreman	198 55	
Freight Porters		13,812 72	
			18,534 32

Yard Office, North Bay.

McKerrow, J. O.	Yard Master	$649 64	
Ness, C.	"	1,485 91	
Richmond, J. N.	"	893 03	
McMillan, R. J.	"	46 97	
Roberts, C. A.	Operator	1,105 86	
LeGallais, F. G.	"	419 13	
Trowhill, R. T.	"	285 03	
Brown, A. W.	"	29 03	
Dwyer, J. H.	"	960 00	
Caley, J. J.	"	168 30	
Samwell, F. W.	"	114 00	
Cattley, B.	"	312 45	
Thompson, W.	Chief Clerk	900 00	
Scott, O.	Clerk	780 00	
Wright, W. T.	"	675 00	
Elston, F.	"	600 00	
Biers, R. H.	"	539 35	
Saunders, F.	"	523 38	
Larivee, E.	"	283 33	
Simms, A.	"	176 78	
Pierpont, H.	Checker	6 66	
Washburn, H.	"	202 41	
Archambeault, O.	Callboy	302 00	
McGoneagl, W.	"	293 80	
Archambeault, H.	"	13 00	
Edwards, R.	Messenger	303 85	
Saunders, L.	"	223 33	
Brown, D.	"	1 66	
Buckmaster, W. J	Checker	593 33	
Grainger, J.	Heaterman	164 16	
Moulder, T.	"	23 76	
Bird, W. A.	"	707 58	
Brigginshaw, W.	"	84 93	
Wilson, J.	"	2 79	
Stamper, S.	Stockman	780 00	
Brusso, N.	Janitor	50 80	
Robinson, N.	Sanitary Work	55 00	
Lake, F.	Checker	30 66	
Reddaway, W.	Heaterman	553 86	
Peters, S.	"	163 97	
Duncan, G.	Checker	413 44	
Lett, R.	"	4 84	
Ritchie, W.	"	179 63	
Wissler, J. S.	"	418 42	
Mulligan, J.	"	35 53	
Gauthier, O.	"	14 94	
Gilchrist, L.	Janitor	2 50	
VanReith, A.	"	202 73	
Samwell, M.	Checker	34 24	
Brown, D.	Messenger	3 25	
Nerate, A. E.	Checker	177 42	
Fisher, G.	Messenger	84 66	
Knight, J. R.	Clerk	56 15	
Looker, A.	Checker	95 16	
Recci, T.	"	5 32	
McGirr, N.	Messenger	48 33	
Lapointe, H.	"	46 66	
Elliot, J.	Clerk	43 55	
Hoover, R. R.	Checker	20 96	
Woodward, F.	"	3 22	
			$17,395 69

Widdifield Station.

Picard, J. W.	Agent	$898 57	
McDonald, A.	Rel. Agent	53 93	
			$952 50

Tomiko Station.

Richardson, R.	Agent	$243 82	
Harrison, G. R.	Operator	329 52	
Doherty, M. R.	Agent	730 99	
Clark, M. G.	Operator	387 65	
Shane, J.	"	57 83	
McDonald, A.	Rel. Agent	81 28	
Price, J. T.	"	115 79	
Valliere, J. L.	Operator	15 65	
			$1,962 53

Diver Station.

Doherty, M. R.	Agent	$206 45	
Borthwick, T. D.	"	124 69	
Baker, T. J.	"	590 90	
			$922 04

Redwater Station.

Baker, T. J.	Operator	$136 30	
O'Connor, J. J.	"	28 89	
Chouinard, J.	"	46 38	
Pelkie, J.	"	182 23	
Bruce, G.	"	349 50	
Borthwick, T. D.	"	65 34	
Schmallbeck, J. H.	"	20 91	
Marshall, C.	"	26 90	
			$856 45

Timagami Station.

Grant, W. A.	Agent	$905 82	
Caley, J. J.	"	62 01	
Beemer, F. B.	"	536 85	
York, W. H.	Clerk	272 13	
			$1,776 81

Latchford Station.

Belanger, O.	Agent	$343 81	
Freeborn, E. E.	Operator	105 83	
Orr, O.	Baggageman	289 51	
Fiddler, R.	Janitress	9 00	
LeGallais, J. W.	Operator	125 21	
Caley, J. J.	"	4 06	
Richardson, R.	Agent	1,110 63	
Pelkie, J. A.	Operator	469 00	
Faught, T. J.	"	68 81	
Schmallbeck, J. H.	"	77 96	
Nitzel, J.	Sanitary Work	20 00	
Kersey, G.	Agent	69 91	
			$2,693 73

Gillies Depot.

Ritza, A. C.	Agent	$887 12	
McDonald, A.	"	39 00	
Valise, J.	Sanitary Work	7 00	
			$933 12

Kerr Lake Station.

Carter, W.	Clerk	$696 00	
			$696 .00

Cobalt Station.

Way, D. H.	Agent	$1,920 00
Hutt, D. A.	Chief Clerk	720 00
Skillicorn, H.	Cashier	840 00
Rapsey, E. J.	Accountant	302 57
Nixon, E.	Biller	818 38
Stuckey, H.	Clerk	639 51
O'Kelly, A.	Stenographer	720 00
Roach, M.	Clerk	162 57
Jammett, C. G.	"	259 33
Earle, W. R.	Operator	1,354 52
Faught, T. J.	"	216 98
Peterman, W. F.	Baggageman	67 09
McKay, D.	Shed Foreman	900 00
Elphick, C.	Checker	299 61
Elliott, R.	"	62 09
McLean, J.	"	208 21
Cox, H.	Porter	270 37
Whitehead, H.	Caretaker	776 78
Parcher, A.	Watchman	44 00
Mercier, A.	Sanitary Work	76 00
Goodhart, C.	Porter	16 12
Seguin, O.	"	4 84
Old, J.	"	5 64
Burns, J.	"	12 90
Midgley, W.	Caretaker	281 16
Sutherland, L.	Porter	133 73
Larson, A.	"	6 05
Bergin, F. W.	"	57 14
McEachren, B.	"	5 35
Bartlet, N.	Janitress	246 79
Mortson, R.	Biller	245 32
LeGallais, F. G.	Operator	12 58
Stringer, B.	Porter	24 08
Johnston, W.	"	18 22
Stevens, G. E.	"	113 66
Smith, A.	"	42 93
Colton, J.	Constable	452 50
Tinsley, A.	Porter	11 66
Fletcher, H.	"	4 16
Fahrbach, P.	"	25 83
Burns, A.	"	20 00
Monkhouse, T.	Checker	313 06
Wiggins, W.	Porter	85 79
Hill, A.	"	6 45
Bergin, F.	"	72 74
Prentice, G. S.	"	23 38
Telepier, O.	"	17 74
Armstrong, C.	"	2 42
Gooda, H.	"	8 87
Burling, A.	"	1 61
Upton, T.	"	2 09
Lyons, E.	Clerk	210 00
Davidson, J.	Checker	95 80
Edmonds, H.	Clerk	3 00
Samwell, M.	Porter	30 83
Sweet, M.	Clerk	186 66
Gilmour, F.	Porter	210 54
Daly, W.	Checker	57 65
Bywaters, H.	"	199 51
Oatey, C.	Porter	26 61
Wilson, H.	"	7 26
Bunyan, G.	"	19 99
McDonald, A.	Operator	116 38
Regan, J.	Porter	5 16
Miller, R.	"	2 66
Bell, R.	Checker	157 74

Cobalt Station.—Continued.

Adams, F.	Checker	122 42	
Hawkey, E.	"	80	
Maund, F. C.	Chief Clerk	240 00	
Clarke, F.	Car Clerk	127 42	
Blackie, D.	"	59 67	
Barnett, J. H.	Operator	9 59	
			$14,822 51

Commercial Telegraph Office, Cobalt.

Mintie, L. A.	Operator	$195 05	
Bunyan, M.	Accountant	720 00	
Fortier, E.	Messenger	355 25	
Caley, J. J.	Operator	7 26	
Barker, R. C.	"	116 12	
Grace, P. J.	"	591 29	
McWilliams, C.	"	45 33	
Anson, T.	Messenger	64 16	
Price, D.	Accountant	19 00	
			$2,113 46

North Cobalt Station.

Ackerman, T. R.	Agent	$33 60	
Gibbon, G.	"	964 31	
Duhaime, A.	Sanitary Work	2 00	
Barnett, J. H.	Agent	18 29	
Silver, L.	Sanitary Work	4 55	
			$1,022 75

Haileybury Station.

Shibley, J. H.	Agent	$1,599 54	
Maund, F. C.	Chief Clerk	400 02	
Trousdale, F. A.	Operator	676 77	
Dwyer, J. H.	"	98 61	
Sears, W. B.	Baggageman	780 00	
Hunter, I.	Cashier	628 86	
Duffett, I. S.	Shed Foreman	727 50	
Schriber, C.	Shedman	226 69	
Harris, J.	Clerk	689 03	
Wiggins, F.	"	230 96	
Brown, A. W.	Operator	421 51	
Stewart, J. A.	Clerk	241 33	
Childs, J.	Shedman	290 32	
Kilpatrick, W. A.	"	39 03	
			$7,050 17

New Liskeard Station.

Goodman, E. M.	Agent	$1,620 00
Varrette, E. J.	Cashier	423 94
Copner, J. N.	Clerk	776 57
Murphy, E.	Baggageman	670 44
Shaw, J.	Checker	67 42
Ridley, W.	"	59 67
Craig, F.	Messenger	393 65
McDonald, A.	Operator	601 31
Pelkie, J. A.	"	77 94
Martindale, J.	Checker	381 61
Hera, F.	Shed Foreman	42 58
Cattley, B.	Operator	301 08
Brown, A. W.	"	46 00
Herron, F.	Shed Foreman	535 00
Faught, T. J.	Operator	2 03
Hayward, E.	Sanitary Work	22 50

New Liskeard Station.—Continued.

Holt, F. G.	Operator	540 52	
Allan, E. M.	Clerk	373 16	
Samwell, F. W.	Operator	87 74	
Marshall, C.	"	11 58	
Wilson, S.	Checker	216 92	
Hogarth, D. A.	"	81 45	
Herron, S.	Baggageman	105 00	
Craig, F.	Janitor	60 74	
Martin, N.	"	2 33	
			7,501 18

Uno Park Station.

Caldwell, W. H.	Agent	$901 18	
Borthwick, T. D.	"	38 56	
			939 74

Thornloe Station.

Allan, J. D.	Agent	$887 76	
Brown, A. W.	"	68 04	
			955 80

Earlton Station.

Buchanan, L.	Agent	$991 88	
Morrison, A. J.	"	16 00	
Brown, A. W.	"	116 51	
Varrette, E. J.	"	15 14	
Clark, M.	Clerk	265 00	
Mortson, N.	"	335 00	
Beemer, F. B.	Operator	38 37	
Marshall, C.	"	117 06	
			1,894 96

Heaslip Station.

Price, J. T.	Agent	$708 42	
Silver, L.	Sanitary Work	5 20	
McDonald, A.	Agent	45 80	
Wiggins, W.	"	96 95	
Chouinard, J.	"	108 38	
			964 75

Elk Lake Station.

Belanger, O.	Agent	$1,036 01	
Brown, G. K.	Clerk	131 29	
Coghill, A.	Baggageman	349 93	
Morrisy, W.	"	10 71	
Champagne, Mrs. H.	Janitress	24 00	
Champagne, H.	Sanitary Work	15 00	
Wiggins, W.	Agent	42 90	
Stanaski, Mrs. T.	Janitress	15 00	
Stanaski, T.	Sanitary Work	18 00	
			1,642 84

Englehart Station.

Murray, F. J.	Agent	$1,270 00	
Brown, A. W.	"	56 44	
Jones, C. S.	Clerk	840 24	
Flagler, J. B.	Operator	622 35	
Holt, F. G.	"	421 34	
Errett, F.	Baggageman	25 00	
Nudds, T.	Checker	577 04	
Ronstead, T.	"	37 48	
Holdritch, R. J.	Callboy	12 50	
Ward, W.	Checker	16 67	

Englehart Station.—Continued.

McDevitt, S.	Checker	62 09	
Gray, C. S.	Shed Foreman	35 75	
Lake, F.	"	36 19	
Plumb, S.	Trucker	274 97	
Hodritch, C.	"	311 50	
Donohue, W.	"	7 35	
Silver, L.	Sanitary Work	180 00	
Mortson, R.	Clerk	56 61	
Errett, T.	Baggageman	550 00	
Millions, T.	Checker	1 61	
Baker, D.	"	244 99	
Murray, J. L.	Shed Foreman	153 59	
Millman, A.	Callboy	274 19	
Vreeland, E.	Trucker	78 75	
Borthwick, T. D.	Operator	546 87	
Schmallbeck, J. H.	"	8 00	
LeGallais, F. G.	"	19 66	
Beemer, F. B.	"	84 00	
Faught, T. J.	"	657 38	
Gray, C. S.	Shed Foreman	392 00	
Gray, E.	Porter	294 20	
Tibbles, J.	"	271 68	
Robinson, E.	Operator	35 60	
Cunneyworth, W. D.	Agent	100 00	
Merritt, L.	Trucker	169 75	
Wiggins, W.	Freight Clerk	78 00	
Bruce, G.	Operator	10 83	
Edwards, E.	Trucker	21 00	
Doherty, M. R.	Operator	93 43	
Varrette, E. J.	"	27 22	
Hoskins, A.	Trucker	3 50	
			8,959 77

Charlton Station.

Brocklebank, C. H.	Agent	$1,110 29	
Ackerman, T. R.	"	126 33	
Canning, J. A.	Checker	204 83	
Earngy, W.	"	8 33	
Hancke, L. E.	"	96 83	
Brown, R.	"	36 77	
Ruckwood, W. J.	Sanitary Work	6 00	
			1,589 38

Dane Station.

Deagle, L. A.	Agent	$1,042 14	
Morrison, A. J.	"	73 22	
Caley, J. J.	"	66 94	
			1,182 30

Bourkes Station.

Chouinard, J.	Operator	$244 42	
Bruce, G.	"	174 74	
Samwell, F. W.	"	37 29	
			456 45

Swastika Station.

Brennan, W. M.	Agent	$987 03	
McDonald, A.	"	63 12	
Brown, A. W.	"	119 44	
Canning, J.	Clerk	27 50	
Speirs, J.	"	280 64	
Backus, F.	"	15 00	
Samwell, F. W.	Operator	10 97	
Marshall, C.	"	30 79	
Chouinard, J.	"	93 47	
Clark, M. G.	"	16 99	
Furlong, A.	Telephone Operator	29 67	
			1,674 62

Matheson Station.

Cullen, H. B.	Agent	$1,399 21	
Brown, A. W.	"	76 52	
Smith, M. E.	Clerk	62 10	
Burton, A.	"	265 48	
McDonald, A.	Agent	12 66	
Marshall, C.	"	16 17	
Russell, F.	Sanitary Work	8 00	
Gauthier, F.	Clerk	12 42	
Thompson, W.	Water for Furnace	2 00	
			1,854 56

Porquis Junction Station.

Sherlock, G. L.	Agent	$1,219 26	
McDonald, A.	"	54 71	
Johnson, J.	Baggageman	685 00	
Richards, J.	Sanitary Work	5 00	
Dodds, G.	"	5 00	
Kersey, G.	Agent	186 02	
McDougall, W.	Clerk	78 83	
Brown, A. W.	Operator	53 60	
			2,287 42

Porcupine Station.

Grant, A. H.	Agent	$647 58	
Dwyer, J. H.	"	9 92	
Varrette, E. J.	"	570 91	
Cattley, B.	Operator	348 16	
Mortson, R.	Clerk	104 84	
LeGallais, F. G.	Operator	217 54	
Borthwick, T. D.	"	64 31	
Tremblay, J.	Janitor	25 00	
Mortson, N.	Clerk	25 16	
Samwell, F. W.	Operator	61 86	
Murphy, E.	"	36 34	
Tremblay, P.	Sanitary Work	8 00	
Marshall, C.	Operator	127 83	
Ackerman, T. R.	"	28 29	
Kersey, G.	"	43 13	
			2,318 87

South Porcupine Station.

Daly, R. W.	Agent	$1,320 00	
Kersey, G.	Operator	838 34	
D'Amour, N. A.	"	128 65	
Deans, E. P.	Cashier	462 90	
Ferguson, P. L.	Clerk	428 30	
Deacon, K.	Messenger and Clerk	532 26	
Humpherson, C.	Baggageman	67 42	
Dixon, T.	Shed Foreman	530 32	
Murphy, S. L.	Trucker	275 00	
Murray, L.	Shed Foreman	5 80	
Pawson, J.	"	92 89	
Collins, J.	Baggageman	128 05	
Chouinard, J.	Operator	110 39	
Wheeler, O. D.	Clerk	157 90	
Mayhew, H.	Operator	216 04	
Docker, I.	Clerk	21 00	
Shane, J.	Operator	21 05	
Deacon, M.	Clerk	440 00	
Schmallbeck, J.	Operator	611 07	
Howie, M.	Messenger	33 38	
Mentage, C.	Shedman	12 00	
Shankman, S.	Baggageman	260 33	
			6,693 09

Schumacher Station.

Matthews, R. D.	Agent	$1,121 17	
McDonald, A.	"	11 09	
Kersey, G.	"	52 00	
Stillwell, W. G.	Operator	650 61	
George, W.	Cleaning Station	12 50	
Gordon, D.	"	10 00	
Mortson, R.	Clerk	60 43	
Pelkie, J. A.	Operator	153 18	
Gilbert, G.	Sanitary Work	28 50	
Price, J. T.	Agent	102 09	
Clark, M. G.	Operator	6 80	
			2,208 37

Timmins Station.

Cunningham, G. L.	Agent	$1,098 83	
Brown, A. W.	"	67 33	
McFarlane, G. C.	Operator	26 10	
Ackerman, T. R.	"	752 34	
Brown, G. K.	Clerk	193 21	
Kyle, W.	Baggageman	610 84	
Stillwell, W. D.	Operator	198 69	
Marshall, C.	"	14 78	
Mortson, R.	Clerk	12 85	
Mitchell, W.	Shed Foreman	180 00	
Wiggins, W.	Operator	9 07	
Barnett, J. H.	"	89 91	
Walker, J.	"	102 90	
Fraser, J.	Checker	78 00	
			3,434 85

Cochrane Station.

Hawkins, J. A.	Agent	$977 58	
Taylor, G.	Operator	1,127 16	
Creighton, W.	"	80 23	
Bernier, J. A.	Clerk	685 00	
Butterworth, J. H.	Cashier	287 83	
Pawson, J.	Shed Foreman	115 00	
Dunn, G.	Checker	290 48	
McKinnon, L.	Baggageman	265 00	
Derway, R.	Messenger	190 00	
O'Connor, J. J.	Operator	429 56	
Lothier, D.	Messenger	90 00	
Humpherson, C.	Shed Foreman	344 51	
Enright, A. J.	Clerk	43 52	
Bauldry, F.	Messenger	80 00	
Williams, R.	Baggageman	341 83	
Clairmont, S. J.	Checker	110 00	
Flagler, J. B.	Agent	558 00	
Robinson, E.	Operator	347 30	
Hunter, I.	Clerk	130 00	
Baker, D.	Shed Foreman	305 80	
Mortson, R.	Cashier	273 22	
Drinkwater, L.	Clerk	149 35	
Beadman, P.	Trucker	227 50	
Savill, H.	Cleaning	12 50	
Barnett, J. H.	Operator	55 67	
Grasser, H.	Clerk	17 74	
			7,534 78

Conductors.

Nidd, J. T.	Conductor	$1,410 07	
Newell, A.	"	1,644 35	
Murray, P. J.	"	1,447 33	
Graham, H. F.	"	1,664 46	
Flegg, R.	"	1,502 59	
McParland, T. J.	"	1,050 88	

Conductors.—Continued.

Hamilton, T.	Conductor		1,574 80	
Gillespie, J.	"		1,607 13	
Aubry, N.	"		1,494 66	
McNab, J.	"		1,493 21	
Jessup, J. H.	"		1,006 41	
Taylor, W. H.	"		1,028 24	
Sullivan, H.	"		1,446 20	
Rouble, A.	"		1,476 90	
Nixon, W.	"		1,601 30	
Bourret, J. W.	"		1,507 68	
Cockerline, J.	"		1,200 69	
Bradford, J. N.	"		1,030 88	
McConomy, E. J.	"		1,671 97	
McKerrow, G.	"		1,449 77	
Steinhoff, J. A.	"		728 08	
Connell, J. S.	"		1,434 34	
Corr, R. A.	"		270 66	
Miller, A.	"		1,415 36	
Bean, J.	"		1,274 84	
Sheppard, E. E.	"		2,198 62	
Cunning, J. H.	"		1,336 05	
Thomas, H.	"		1,517 29	
Chambers, A. J.	"		1,397 80	
Reesor, A. P.	"		1,671 15	
Loney, W.	"		384 46	
Stoughton, N.	"		827 82	
Beaudet, J. A.	"		629 38	
Miller, J. S.	"		1,159 78	
Archer, H.	"		1,250 61	
Kennedy, J.	"		305 42	
Copps, R. W.	"		2 88	
Lillie, O.	"		1,423 21	
McTavish, R.	"		1,202 06	
Kerr, C. D.	"		167 82	
Willoughby, J. A.	"		238 88	
Campbell, W. A.	"		463 30	
St. Louis, F.	"		308 84	
Kennedy, L.	"		79 41	
Begin, P.	"		81 17	
Simpkins, W.	"		17 72	
Dubois, C. H.	"		247 58	
King, A.	"		151 68	
Leckie, J. W.	"		457 38	
Treacy, W. L.	"		161 45	
Smith, T. L.	"		75 03	
King, E. J.	"		44 46	
Richmond, J. N.	"		40 99	
Robinson, E.	"		5 29	
Dorschner, A.	"		9 14	
				51,289 47

Brakemen.

Paul, G.	Brakeman		$319 78
Smith, T. L.	"		1,242 96
Gillespie, C.	"		369 34
Kerr, C. D.	"		904 48
McQuestion, W. A.	"		926 91
Begin, P.	"		598 73
Cockerline, A. S.	"		873 96
Holland, J.	"		1,076 79
Edwards, A.	"		1,042 63
Sullivan, K.	"		1,152 32
Shepherd, E. C.	"		877 94
McDonald, A.	"		1,096 05
Lett, W.	"		1,136 09
Dougherty, T. J.	"		992 77
Dorschner, A.	"		1,053 21

Brakemen.—Continued.

Francis, S.	Brakeman		1,038 91
Edwards, W. J.	"		1,188 09
Bateman, G.	"		366 87
Brown, W. C.	"		417 00
King, E. J.	"		1,128 18
Leckie, J. W.	"		364 65
Clark, C.	"		1,132 21
Downey, M. J.	"		970 61
Ferrier, G.	"		1,042 68
Manning, W.	"		1,384 25
O'Toole, G. A.	"		691 06
Lee, G.	"		1,163 30
Kinsella, A.	"		369 07
Copps, R. W.	"		1,224 26
Kennedy, L.	"		979 13
Coburn, G.	"		911 54
McLeod, J.	"		951 46
Fisher, R.	"		920 01
King, A.	"		1,131 40
Willoughby, J. A.	"		1,040 94
Whalen, L.	"		953 32
James, R.	"		1,077 99
Gauthier, A.	"		1,008 51
Simpkins, W.	"		1,377 70
Campbell, W. A.	"		533 56
Atkinson, H.	"		1,062 74
Lavoie, P. J.	"		573 59
Chambers, J. W.	"		1,178 10
Archer, H.	"		188 00
Souliere, J.	"		250 88
Lefebvre, F.	"		995 15
Richmond, J. N.	"		360 55
St. Louis, F.	"		845 22
Robinson, E.	"		1,255 32
Beaudet, J. A.	"		447 00
Dubois, C. H.	"		1,151 10
Faught, L. G.	"		487 33
Sullivan, T. J.	"		962 01
Treacy, W. L.	"		1,351 94
Laderoute, M.	"		668 90
Richardson, F.	"		669 51
Smith, G. R.	"		178 70
Hill, W.	"		1,001 18
Farmer, A.	"		990 77
Farmer, W.	"		993 55
Shields, F.	"		845 68
McAughey, T.	"		975 67
Seguin, J. W.	"		1,185 22
Pigeau, E. J.	"		773 83
Thurlow, J.	"		811 35
Tetreau, E.	"		1,022 34
Robbins, F.	"		901 21
Smith, S. E.	"		683 75
McAughey, A.	"		310 13
Jackson, T. J.	"		1,265 24
Gauthier, O.	"		369 24
Fournier, N.	"		641 36
Mills, W.	"		64 84
Hart, J.	"		162 40
Durack, D. B.	"		1,046 44
Hommell, T. E.	"		158 64
Scott, F. J.	"		1,230 72
McMillan, R. J.	"		1,268 01
McAndrews, J. J.	"		147 39
Kennedy, J.	"		884 42
Bailey, J.	"		835 02
Johnston, A.	"		127 48
Chambers, A. J.	"		98 52

Brakemen.—Continued.

Flemming, R.	Brakeman		948 39	
Steinhoff, J. A.	"		510 08	
Kelly, H.	"		738 57	
Waddell, J.	"		584 26	
Dumond, A. W.	"		470 45	
Ryan, H.	"		636 80	
Simms, P.	"		376 78	
Childerhose, W. B.	"		337 15	
Wall, W. J.	"		569 34	
Ringler, R. G.	"		160 99	
Mantha, O.	"		74 63	
Spencer, W. L.	"		609 13	
Booth, H.	"		252 03	
Morgan, J.	"		41 44	
Potter, S. G.	"		617 74	
Fraser, E.	"		518 90	
Fournier, J.	"		14 33	
Loney, W.	"		487 34	
Miller, J. S.	"		99 48	
Stoughton, N.	"		382 47	
Bourret, J. W.	"		35 44	
Sullivan, H.	"		44 53	
Goodwin, J.	"		501 45	
Palmer, A.	"		8 10	
Larone, A. T.	"		449 20	
Morgan, J.	"		2 07	
Jewell, J. D.	"		464 06	
Connelly, F.	"		277 61	
Levoys, J.	"		88 11	
Stoughton, F.	"		232 01	
Saunders, F.	"		214 84	
McCoughan, L.	"		230 99	
Winters, R.	"		203 10	
Cramp, A.	"		182 33	
McCallum, F.	"		276 92	
Murphy, W.	"		193 46	
Allan, J.	"		203 44	
Ryan, W. C.	"		44 21	
Chambers, W. H.	"		231 79	
Lewis, H.	"		9 31	
Hogan, J.	"		25 86	
Shea, W. J.	"		19 06	
				80,819 29

Locomotive Engineers.

Morgan, F.	Engineer		$2,136 28
Shaw, L. G.	"		2,124 77
Donohue, J.	"		1,794 59
Fry, J.	"		1,631 24
Coomb, G.	"		1,946 75
Thomas, W.	"		1,813 24
Millman, W. C.	"		1,922 46
McKaig, S. J.	"		1,397 74
McMillan, N.	"		2,280 68
Currie, N.	"		2,201 79
Johnston, J. C.	"		1,711 90
Hill, T. H.	"		1,807 62
Ross, W.	"		1,346 19
Jessup, R.	"		1,613 81
McElhaney, H.	"		1,874 55
Thomas, F.	"		1,879 33
Lackie, S.	"		1,978 49
McLeod, A.	"		1,738 80
Newman, A.	"		1,786 14
Langlois, J.	"		1,149 52
Filiatrault, Z. E.	"		1,401 69
Reynolds, H.	"		1,491 00

Locomotive Engineers.—Continued.

Holland, J.	Engineer	1,351 63	
Johnston, J. A.	"	1,432 83	
Copeland, J. E.	"	1,614 86	
Plaus, W.	"	1,601 51	
Nolan, P. B.	"	1,988 39	
McGovern, H. E.	"	1,181 47	
Leishman, E. G.	"	1,221 85	
Ward, A.	"	1,594 07	
Kirk, F. G.	"	1,585 74	
McKenzie, H. W.	"	1,326 44	
Copeland, J. R.	"	1,152 89	
McKerrow, J. E.	"	930 94	
Morris, J.	"	504 58	
McGuire, T.	"	138 22	
Hermeston, H.	"	503 12	
Brooks, F.	"	293 13	
Nornabell, E. A.	"	1,564 25	
Howard, T.	"	1,748 50	
Durkin, J. T.	"	1,577 66	
Smith, D.	"	1,980 91	
McEwan, S.	"	4 23	
Biggs, J.	"	33 30	
Connell, W. D.	"	22 60	
Bedard, S.	"	216 03	
Wilson, J. T.	"	1,496 19	
Beauchamp, H.	"	1 95	
			66,095 87

Locomotive Firemen.

Connell, W. D.	Fireman	$1,114 03	
Brooks, F.	"	124 26	
Vernon, A.	"	657 07	
Hermeston, H.	"	757 64	
Newman, S. B.	"	884 16	
McMenemy, A.	"	1,194 95	
McCann, J.	"	360 65	
McElhaney, A.	"	1,290 29	
Jarvis, A.	"	172 27	
McKenzie, A. B.	"	1,062 04	
Lewis, H.	"	1,252 83	
Beauchamp, H.	"	1,188 50	
Moore, A.	"	953 94	
Bonell, J.	"	0 93	
Milburn, E.	"	694 89	
Vincent, R.	"	1,195 26	
Moore, C.	"	142 48	
Sirois, A.	"	681 12	
Tripp, G.	"	1,206 85	
Milne, C.	"	287 97	
Nudds, G.	"	826 74	
Edge, T.	"	187 53	
Pye, H.	"	84 47	
McCallum, F.	"	677 53	
Spiller, A.	"	1,142 46	
McGuire, T.	"	130 27	
McEwan, S.	"	794 80	
Anyan, G. W.	"	879 34	
McLeod, J.	"	1,232 82	
Biggs, J.	"	1,026 62	
Muldoon, T.	"	934 51	
Jackson, T.	"	1,416 73	
Minnikin, O.	"	1,040 11	
Mantha, O.	"	199 39	
Ellis, L. W.	"	278 55	
McMillan, H.	"	448 68	
Radford, A.	"	571 67	
Garrity, A. J.	"	35 63	

Firemen.—Continued.

Croghan, R.	Fireman	812 11	
Yorkston, J.	"	1,085 84	
Mills, D.	"	15 40	
Jarvis, R. G.	"	967 71	
Brooks, G.	"	919 12	
Boone, E.	"	13 26	
Woods, C.	"	663 84	
Larson, A.	"	7 84	
McQuestion, G.	"	111 35	
Aubert, C. F.	"	2 94	
Biers, G.	"	975 43	
Woollings, T.	"	880 75	
Talline, S.	"	7 89	
Colosemo, J.	"	1 98	
Palmer, J.	"	927 20	
Gentil, A.	"	594 51	
McKenney, J.	"	2 69	
Barnet, A.	"	242 29	
North, G.	"	8 08	
Wilson, G.	"	4 98	
Doyle, J. P.	"	664 26	
Campbell, G.	"	27 57	
Dow, L. L.	"	13 54	
Clarke, H.	"	25 35	
Morono, T.	"	7 39	
Kelly, H.	"	9 92	
McCarthy, M.	"	32 43	
Tooley, J.	"	22 71	
Warner, S.	"	6 86	
Fisher, J.	"	41 18	
Caughey, J. B.	"	3 06	
Duffy, H. E.	"	24 14	
Buchan, A.	"	133 19	
Vreeland, C.	"	75 73	
Thomas, J.	"	367 05	
Cole, F.	"	256 46	
Cole, E.	"	5 26	
Thompson, W. H.	"	20 65	
Allen, F.	"	271 36	
McKerrow, J. E.	"	458 53	
Bedard, S.	"	457 93	
Smith, D.	"	242 52	
Wilson, A. M.	"	117 60	
Couchesne, P.	"	20 09	
Couchesne, W.	"	23 81	
Leishman, E. G.	"	346 07	
Copeland, J. R.	"	183 94	
McKenzie, W.	"	265 24	
McGovern, H. E.	"	349 36	
Cusson, R.	"	4 79	
Law, C.	"	22 62	
Anderson, J.	"	46 71	
Ward, A. T.	"	2 94	
			39,919 45

Office of C. E. and S. of M.

Clement, S. B.	C. E. and S. of M.	$3,850 00	
Dickson, G. H.	Chief Draughtsman	1,600 00	
Clarke, L. S.	Draughtsman	482 58	
Scott, C. R.	"	580 00	
Johnston, W. I.	Chief Clerk	1,500 00	
Morgan, N. L.	Stenographer	571 88	
Sherritt, H. F.	"	477 42	
Huntington, R. S.	Office Boy	253 55	
McRoberts, A. A.	Draughtsman	528 38	
Devine, A.	Office Boy	87 90	
Anderson, F.	Stenographer	2 58	
Ansell, H.	"	61 80	
			$9,996 09

Englehart Greenhouse.

Kerrigan, D.	Gardener	$840 00	
Aitcheson, F.	"	720 00	
Laborers		1,207 15	
			$2,767 15

Telegraph and Telephone Department, North Bay.

Kelly, W. J.	Supervisor	$1,500 00	
Picard, P.	Lineman	934 37	
Ferguson, L. M.	Inspector	457 97	
Boyer, L.	Lineman	61 23	
Ryan, P.	"	134 33	
			$3,087 90

Telegraph and Telephone Department, Englehart.

Simpson, G.	Lineman	$933 67	
Toupin, P.	"	37 33	
			$971 00

Telegraph and Telephone Department, Cochrane.

Loisel, S.	Lineman	$931 63	
Extra Linemen		366 75	
			$1,298 58

Telegraph and Telephone Department Extra Gang.

Ferguson, L. M.	Foreman	$560 00	
Boyer, J.	"	450 00	
Linemen		7,333 04	
			$8,343 04

Office of Master Mechanic.

Ross, Thos.	Master Mechanic	$2,030 00	
Ellwood, R.	Chief Clerk	950 00	
Morell, A.	Stenographer	9 00	
Gregoire, T.	"	9 75	
Raymond, J.	"	578 33	
Smith, C.	Office Boy	275 00	
			$3,852 08

Road Foreman of Engines.

Douglass, J. J.	Road Foreman	$1,680 00	
			$1,680 00

Motive Power Department, North Bay.

Black, W.	General Foreman	$1,560 00	
	Machinists	20,996 43	
	Carpenters	863 60	
	Other Shopmen	49,942 96	
			$73,362 99

Car Department. North Bay.

Beath, J.	Car Foreman	$1,120 00	
	Machinists	89 08	
	Carpenters	3,847 55	
	Repairers, Cleaners, etc.	23,748 67	
			$28,805 30

Carpenter Shop, North Bay.

Bailey, J.	Foreman	$1,265 00	
	Carpenters	10,915 61	
	Other Shopmen	16,017 24	
			$28,197 85

M. P. and Car Department, Cobalt.

Sibbald, T.	Car Inspector	$925 40	
	Other Shopmen	982 89	
			$1,908 29

M. P. and Car Department, Elk Lake.

	Other Shopmen	$1,529 05	
			$1,529 05

M. P. and Car Department, Englehart.

Clarke, R.	Locomotive Foreman	$1,440 00	
	Machinists	3,158 22	
	Other Shopmen	12,711 20	
	Repairers, Cleaners, etc.	6,640 14	
			$23,949 56

M. P. and Car Department, Timmins.

Thompson, E.	Foreman	$1,200 00	
	Other Shopmen	6,636 50	
			$7,836 50

M. P. and Car Department, Cochrane.

Walters, J.	Foreman	$105 00	
Moth, A. T.	"	1,080 64	
	Machinists	27 88	
	Other Shopmen	6,914 40	
			$8,127 92

Resident Engineer and Staff.

Boast, R. G.	Resident Engineer	$1,500 00	
	Instrument Men, etc.	11,189 76	
			$12,689 76

Locating Engineers.

Keys, W. R.	Locating Engineer	$1,800 00	
Maher, W. R.	"	2,400 00	
McMillan, J. G.	"	2,750 00	
	Assistants	7,576 63	
			$14,526 63

Office of B. and B. Master.

Oldham, W. J.	B. and B. Master	$1,800 00	
Stafford, E. J.	Clerk	938 00	
			$2,738 00

B. and B. Department, Water Service.

Bland, R.	Inspector	$985 81	
	Pumpmen	7,574 39	
			$8,560 20

B. and B. Department, Extra Gangs.

Carpenters		$43,642 54	
Laborers, etc.		38,256 81	
			$81,899 35

Office of General Roadmaster.

Young, Wm.	General Road Master	$1,800 00	
Young, J.	Chief Clerk	830 00	
Jacobs, G. E.	Stenographer	615 00	
			$3,245 00

Track Supervisors.

Edwards, A.	Supervisor	$1,500 00	
Faught, S. J.	"	1,500 00	
Drinkwater, J.	"	1,500 00	
Litle, D.	"	24 19	
Belliveau, J.	"	37 50	
			$4,561 69

Section Gangs.

Section No. 0	Foremen	$1,290 85	
	Laborers	15,390 10	
" 1	Foremen	881 13	
	Laborers	2,377 27	
" 2	Foremen	898 60	
	Laborers	2,243 16	
" 3	Foremen	898 32	
	Laborers	2,063 79	
" 4	Foremen	937 28	
	Laborers	2,792 43	
" 5	Foremen	891 71	
	Laborers	2,404 83	
" 6	Foremen	878 74	
	Laborers	2,359 80	
" 7	Foremen	880 56	
	Laborers	2,380 09	
" 8	Foremen	917 41	
	Laborers	2,339 09	
" 9	Foremen	900 46	
	Laborers	2,274 68	
" 10	Foremen	877 68	
	Laborers	2,068 96	
" 11	Foremen	937 81	
	Laborers	2,507 21	
" 12	Foremen	923 74	
	Laborers	2,370 25	
" 13	Foremen	881 85	
	Laborers	2,035 10	
" 14	Foremen	940 96	
	Laborers	2,599 34	
" 14½	Foremen	909 21	
	Laborers	2,189 43	
" 15	Foremen	911 60	
	Laborers	3,635 76	
" 15½	Foremen	837 92	
	Laborers	1,437 92	
" 16	Foremen	916 84	
	Laborers	2,962 33	
" 17	Foremen	951 87	
	Laborers	2,631 88	
" 18	Foremen	873 98	
	Laborers	2,440 74	
" 19	Foremen	894 90	
	Laborers	2,318 28	
" 20	Foremen	906 29	
	Laborers	2,455 81	
" 21	Foremen	1,892 52	
	Laborers	10,141 19	
" 21½	Foremen	915 58	
	Laborers	2,418 51	

Section Gangs.—Continued.

"	22	Foremen	919 04	
		Laborers	2,597 79	
"	23	Foremen	904 65	
		Laborers	2,398 18	
"	24	Foremen	920 27	
		Laborers	2,079 96	
"	25	Foremen	958 51	
		Laborers	2,536 50	
"	26	Foremen	906 04	
		Laborers	2,424 18	
"	27	Foremen	901 79	
		Laborers	2,032 76	
"	28	Foremen	911 33	
		Laborers	2,037 91	
"	29	Foremen	911 07	
		Laborers	2,032 20	
"	30	Foremen	898 63	
		Laborers	2,150 80	
"	31	Foremen	993 81	
		Laborers	2,366 48	
"	32	Foremen	903 64	
		Laborers	2,333 58	
"	33	Foremen	936 25	
		Laborers	2,524 72	
"	34	Foremen	903 38	
		Laborers	1,984 22	
"	35	Foremen	894 91	
		Laborers	2,275 49	
"	36	Foremen	910 28	
		Laborers	2,249 53	
"	37	Foremen	1,927 44	
		Laborers	6,609 52	
"	38	Foremen	930 00	
		Laborers	2,732 20	
"	39	Foremen	925 04	
		Laborers	2,197 35	
"	40	Foremen	887 42	
		Laborers	1,870 79	
"	41	Foremen	1,038 55	
		Laborers	3,650 65	
"	42	Foremen	921 58	
		Laborers	4,556 37	
"	43	Foremen	796 71	
		Laborers	2,673 26	
"	44	Foremen	743 22	
		Laborers	2,941 98	
"	45	Foremen	729 17	
		Laborers	2,396 09	
"	46	Foremen	826 76	
		Laborers	2,282 62	
"	47	Foremen	111 03	
		Laborers	532 19	
				$194,863 60

Road Department, Extra Gangs.

Extra Gang No.	1	Foremen	$2,467 75	
		Laborers	25,905 52	
"	2	Foremen	371 14	
		Laborers	1,641 98	
"	3	Foremen	1,372 28	
		Laborers	6,213 17	
"	4	Foremen	992 56	
		Laborers	11,233 52	
"	5	Foremen	636 06	
		Laborers	2,668 58	

Road Department, Extra Gangs.—Continued.

"	6	Foremen	842 85	
		Laborers	2,579 83	
"	7	Foremen	882 35	
		Laborers	10,078 76	
"	8	Foremen	1,411 59	
		Laborers	13,699 58	
"	9	Foremen	2,365 44	
		Laborers	23,576 79	
"	10	Foremen	1,373 73	
		Laborers	5,445 61	
"	11	Foremen	204 00	
		Laborers	990 65	
"	12	Foremen	1,669 48	
		Laborers	13,403 68	
"	13	Foremen	1,365 92	
		Laborers	8,622 77	
"	14	Foremen	221 32	
		Laborers	2,428 29	
"	15	Foremen	434 60	
		Laborers	3,798 90	
"	16	Foremen	401 80	
		Laborers	1,316 77	
"	17	Foremen	1,366 56	
		Laborers	16,377 64	
"	18	Foremen	918 96	
		Laborers	3,355 78	
"	19	Foremen	1,381 15	
		Laborers	15,633 30	
"	20	Foremen	105 90	
		Laborers	451 06	
"	21	Foremen	815 64	
		Laborers	13,127 13	
"	22	Foremen	2,009 79	
		Laborers	3,868 32	
"	23	Foremen	391 49	
		Laborers	2,973 67	
"	24	Foremen	227 10	
		Laborers	1,584 42	
"	25	Laborers	217 45	
"	26	Foremen	1,071 89	
		Laborers	7,711 30	
"	27	Foremen	91 70	
		Laborers	733 24	
				$225,030 76

Total Payrolls for Year $1,218,473 04

North Bay, December 12th, 1913.

T. J. G.
H.

PAY ROLLS

November 1st, 1912 to October 31st, 1913.

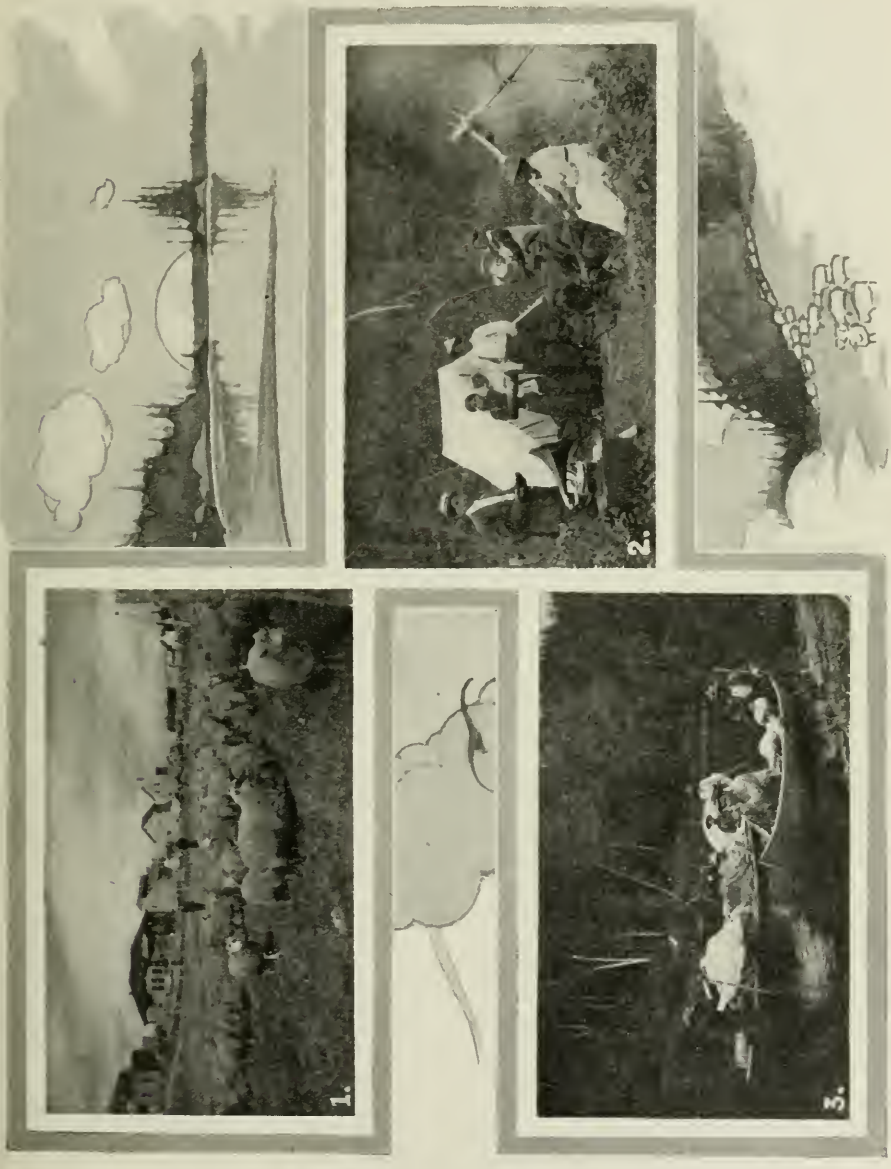
Distribution

Account.	No.	Total days worked.	Total compensation.	Average daily compensation.
			$ c.	$ c.
Maintenance of Way and Structures	529	150,638	322,605 70	2 14
Maintenance of Equipment	180	65,580	158,682 87	2 42
Traffic Expenses	11	4,431	9,823 50	2 22
Transportation Expenses	390	164,897	424,510 46	2 57
General Expenses	53	20,983	56,097 28	2 68
Totals—Maintenance	1,164	406,529	971,719 81	2 39
Additions and betterments	181	43,989	97,688 22	2 23
Construction	278	66,156	149,065 01	2 21
Totals	1,622	516,674	1,218,473 04	2 35

STATEMENT.

Pay Rolls, January, 1905 to October 31, 1913

——	Operation.	Construction.	Total.
	$ c.	$ c.	$ c.
1905—January to December 31st	63,854 94	152,264 43	216,119 37
1906 " "	190,640 54	259,573 48	450,214 02
1907 " "	424,019 67	150,939 42	574,959 09
1908 " "	588,050 81	99,490 85	687,541 66
1909 " October 31st	629,279 23	51,793 24	681,072 47
1910—November, '09 "	794,601 82	83,590 25	878,192 07
1911 " "	748,522 65	34,696 24	783,218 89
1912 " "	891,004 58	199,306 07	1,090,310 65
1913 " "	971,719 81	246,753 23	1,218,473 04
	5,301,694 05	1,278,407 21	6,580,101 26



1. Flock of sixty sheep. Mr. Goldstein, Charlton. (Four years ago there was not a sheep in the township.)
2. Indians hearing Gramophone first time.
3. On the Montreal River.

TEMISKAMING AND NORTHERN ONTARIO RAILWAY

EXPENDITURE FOR FISCAL YEAR, 1913

ADAMS & WESTLAKE CO., CHICAGO, ILL.

Voucher.		
37921—Coach fittings	$203 76	
37488— " "	112 20	
39295—Weather strip, ¾ in.	16 25	
39487—Steel coach keys	6 48	
38078—Coach fittings	34 20	
39852—Window locks	5 76	
40701—Coach fittings	34 25	
41098— " "	18 12	
40296— " "	73 63	
41246—Spittoons	12 50	
41797—Grommet knobs	4 32	
41870—Seat number plates and screws	14 90	
42226—Coach fittings	28 02	
43447— " "	45 04	
42756— " "	58 80	
43502— " "	18 12	
		$686 35

FRED. ARMSTRONG CO., LTD., TORONTO, ONT.

37977—Testing bell circuits and putting in new batteries in offices	$1 75	
41675—Repairing bell and putting in new batteries in offices	2 05	
43073—Putting in new battery and bell, etc., in office	2 25	
		$6 05

THE ART METROPOLE, LTD., TORONTO.

37755—Mounting two plans of Cochrane new sub-division	$1 75	
37983—24-inch cement testing tube	4 25	
38084—Chesterman's tapes	45 12	
38200—Steel band chain, 2,118/10's	5 36	
40075—Field books, 2,306	16 50	
40271—Steel band chain, 5,601/100'	6 40	
39854—2,932 books, tape, 5,602/100'	22 80	
39916—Steel band chains, 5,601/100'	12 80	
40636—Repairs to level	7 50	
41611—Repairs to buff transit and making new box for same	27 50	
42409—2,306 level books	5 50	
42664—Tripod and repairs to transit and level	34 00	
43138—Blue print paper level rod ribbons	11 45	
		$200 93

AMERICAN BRAKE SHOE & FOUNDRY CO., MAHWAH, N.J.

37490—Brake Shoes	$681 80	
38258— " "	863 93	
39016— " "	652 37	
40260— " "	123 56	
40454—Driver shoes	53 91	
41901—Brake shoes and driver shoes	402 05	
42407—Brake shoes	292 05	
41872—Brake shoes	140 35	
43592—Car shoes	396 00	
		$3,606 02

ALLEN MANUFACTURING CO., LTD., TORONTO.

37923—Laundry work performed for car "Sir James"	$3 92	
37476— " " " "Temagami"	1 36	
38020— " " " "Sir James"	4 11	
38318— " " " "Sir James" and "Temagami"	23 53	
39733— " " " "Sir James"	3 54	
39620— " " " "Sir James"	6 10	
40420— " " " "Sir James"	4 52	
42607— " " " "Sir James"	7 83	
43107— " " " "Sir James"	9 78	
		$64 69

AMERICAN RAILWAY ASSOCIATION, NEW YORK, N.Y.

37875—Copies of code of car service, per diem and switch recl. ..	$1 20	
38851—Copies of per diem and car service rules	1 00	
38911—Annual dues and assessments, 1913	29 67	
40518—Assessment No. 45, copies of code of per diem rules.. ...	39 97	
41613—Track specifications	1 00	
41799—Copies car service rules and per diem rules	60	
		$73 44

AMERICAN CRAYON CO., SANDUSKY, OHIO.

40458—Crayons	$5 50	
		$5 50

ARMOUR CAR LINES, CHICAGO, ILL.

37130—Car service balance, November, 1912	$6 11	
39105— " " December, 1912	2 88	
39248— " " March, 1912	5 30	
41977— " " May, 1913	9 01	
41728— " " June, 1913	4 73	
42817— " " July, 1913	4 12	
42912— " " August, 1913	5 49	
		$37 64

ATCHISON, TOPEKA & SANTA FE RAILWAY, TOPEKA, KAN.

38233—Car service balance, October, 1912	$4 90	
38481—Car repairs, September, 1912, audit No. 71183.....	2 47	
37004—Car repairs, September, audit No. 71234	2 41	
37128—Car service balance, November, 1913	43 05	
39103—Car service balance, December, 1912	34 80	
38378—Car repairs, audit No. 71902, services V.	24 99	
38510—Car service balance, January, 1913	35 10	
40421—Car repairs, November-January, 1913, bill No. 72443.....	34 75	
39244—Car service balance, March, 1913	30	
41109—Car repairs, Dec., 1912, and Jan., 1913, bill No. 72508....	17 24	
40698—Car service balance, April, 1913	3 60	
42113—Car repairs, bill 73921	3 30	
41726—Car service balance, June, 1913	3 15	
42260—Car repairs, May, 1913, bill 73820	72	
42815—Car service balance, July, 1913	17 25	
43244—Car repairs, bill No. 80632, April 4th to 24th, 1913.....	11 57	
		$239 60

ARMSTRONG & KINGSTON, LATCHFORD, ONT.

41421—Loss, whiskey flasks, broken in transit, claim 6632.....	$1 60	
		$1 60

H. ARMSTRONG, CHARLTON, ONT.

40020—Ties	$54 90	
		$54 90

AMERICAN HOIST & DERRICK CO., ST. PAUL, MINN.

37753—Crossheads	$20 80	
38909—Gear cover complete	16 20	
39727—Repair parts	17 50	
43504— " "	80 95	
		$135 45

ADVANCE PUMP & COMPRESSOR CO., BATTLE CREEK, MICH.

38080—Stuffing box, brass bushed, for 7" x 6¾" x 8" pump	$1 69	
		$1 69

A. J. Ansley, Elk Lake, Ont.

37726—Glass broken in transit and freight charges, claim No. 5762	$2 25	
		$2 25

Ann Arbor Railway Co., Detroit, Mich.

37138—Car service balance, November, 1912	$1 05	
39113— " " December, 1912	7 00	
38438—Car repairs, audit No. 278, December, 1912	25 57	
38520—Car service balance, January, 1913	3 60	
39246— " " February, 1913	6 75	
41979— " " May, 1913	4 05	
43245—Car repairs, audit No. 291, July, 1913	53	
42918—Car service balance, August, 1913	4 95	
		$53 50

Association of Transportation & Car Accounting Officers, Chicago, Ill.. (F. M. Luce, Treas.)

38967—Assessments, January, 1913	$3 47	
40974—Annual dues, July 1st, 1913, to June 30th, 1914	10 00	
		$13 47

American Association of General Baggage Agents, Toronto.

38853—Annual dues for year 1913—A. J. Parr	$5 00	
		$5 00

Alabama Great Southern Railway, Washington, D.C.

Voucher.		
37132—Car service balance, November, 1912	$28 00	
39107— " " December, 1912	12 25	
38380—Car repairs, bill No 30412	1 20	
40417— " bill No. 30691	64	
43242— " bill No. 32876, bill No. 32577	2 91	
		$45 00

Atlantic Coast Line Railroad, Wilmington, N.C.

38483—Car repairs, bill No. 6063	$15 76	
37134—Car service balance, November, 1912	8 75	
39111— " " December, 1912	22 55	
38516— " " January, 1913	17 60	
39252— " " March, 1913	56 25	
40022—Car repairs, bill No. 7739	30	
41107— " February, 1913	4 68	
41730—Car service balance, June, 1913	1 80	
42819— " " July, 1913	9 75	
42916— " " August, 1913	14 70	
		$152 14

Alabama & Vicksburg Railway, New Orleans, La.

38235—Car service balance, October, 1912	$4 55	
		$4 55

Atlanta & West Point Railroad, Atlanta, Ga.

37422—Car repairs, audit No. 20339	$1,76	
		$1 76

American Refrigerator Transit Co'y, St. Louis, Mo.

39109—Car service balance, December, 1912	$5 69	
38514— " " January, 1913	1 90	
39250— " " March, 1913	10 75	
42914— " " August, 1913	1 54	
		$19 88

G. W. Ames, Bay City, Mich.

39689—For S. ½ Lot 1, Con. 4, Calvert—6.5 acres	$250 00	
41372— " " " " —3 "	120 00	
42592— " " " "	850 00	
		$1,220 00

Anchor Packing Co., Walkerville, Ont.

43145—Tauril sheet packing	$8 78	
		$8 78

Association of American Railway Accounting Officers, Chicago, Ill.

36830—Annual dues, year ending May 31st, 1913	$7 00	
40634— " " " 1914	7 00	
		$14 00

The American Lumberman, Chicago, Ill.

40331—Balance due on subscription (W. A. Graham)	$0 50	
		$0 50

Alex. Avery & Sons, North Bay, Ont.

41229—Estimate No. 1 work to May 31st, 1913	$1,280 45	
41609—Drilling and rock excavation, North Bay Jct., Certificate No. 2	2,400 55	
41370—Drilling and excavation, North Bay Jct., Certificate No. 3	1,784 99	
		$5,465 99

Frank Aubert, Englehart, Ont.

38855—Cleaning fire guard, Englehart, per Certificate No. 4	$202 50	
		$202 50

Akron, Canton & Youngstown Railway, Akron, Ohio.

43246—Car repairs, bill No. 8-24, August, 1913	$1 27	
		$1 27

Arkansas Southeastern Railway Co., St. Louis, Mo.

39635—Amount of per diem remitted to us in error	$2 10	
		$2 10

American Forestry Co., Boston, Mass.

40953—Seeds, hazelnut, black ash and mountain ash	$3 58	
		$3 58

Atcheson, Topeka & Santa Fe Coast Lines, Los Angeles, Cal.

37420—Car repairs, October, audit No. 3266	$0 40	
40419— " December, 1912, bill No. 5060	3 45	
40856— " March and April, 1913	3 30	
43197— " July, 1913, audit No. 15363	2 22	
		$9 37

The Alexander & Cable Lithographing Co., Ltd., Toronto, Ont.

36888—Printing and embossing passes	$8 50	
		$8 50

Air Brake Association, Boston, Mass.

37985—1912 Proceedings	$1 50	
43632—1913 "	1 75	
		$3 25

T. R. Ackerman, Relieving Agent, North Cobalt Station, North Bay, Ont.

37703—Travelling expenses, October, 1912	$10 50	
37705— " November, 1912	9 75	
		$20 25

American Arch Co., New York, N.Y.

37981—Fire brick	$63 75	
38082—Packing	1 55	
40073—Fire brick	21 50	
42228— "	2 50	
		$89 30

American Railway Master Mechanics' Association, Chicago, Ill.

41156—Annual dues, June 30th, 1913, to June 30th, 1914	$5 00	
		$5 00

Allis, Chalmers & Bullock, Ltd., Toronto.

37979—Parts for Lidgerwood unloader	$41 50	
38958—Overcharge demurrage claim, No. 6709	9 00	
		$50 50

Algoma Steel Company, Ltd., Sault Ste. Marie, Ont.

37649—Steel rails	$15,864 12	
37655— " "	14,210 97	
37657— " "	17,736 02	
37919—Tie plates	1,427 09	
37480—Steel rails	12,470 70	
39218— " "	14,955 17	
39220— " "	15,844 20	
39524— " "	14,822 75	
39526— " "	14,532 69	
40789— " "	28,328 42	
41096— " "	3,355 19	
		$153,547 32

Algoma Central & Hudson Bay Railway, Sault Ste. Marie, Ont.

37424—Car repairs, bill No. 731	$0 66	
		$0 66

Atlanta, Birmingham & Atlantic Railway, Atlanta, Ga.

37136—Car service balance, November, 1912	$5 95	
38518— " " January, 1913	2 25	
40415—Car repairs, October-November, 1912, bill No. 1797	10 68	
39254—Car service balance, March, 1913	8 55	
40700— " " April, 1913	5 40	
		$32 83

Hugh Allen, Inspector, Resident Engineer's Office, North Bay, Ont.

38937—Expense account, January, 1913	$5 95	
37946— " February, 1913	1 90	
39806— " April, 1913	5 45	
		$13 30

American Malleables Company, Mahwah, N.J.

40703—Brake shoe bolts	$40 00	
		$40 00

Annual Review Publishing Co., Ltd., Toronto.

41733—Canadian Annual Review of Public Affairs, 1912	$4 50	
		$4 50

AMERICAN RAILWAY ENGINEERING & MAINTENANCE OF WAY ASSOCIATION, CHICAGO, ILL.

Voucher.
37382—Subscription, annual dues and binding proceedings bulletin from January 1st, 1913-December 1st, 1913 ..... $10 50 — $10 50

AMERICAN ENGINEER, NEW YORK, N.Y.

37384—Two subscriptions, one year, ending December, 1913 ..... $4 00 — $4 00

G. ALLEN, HEASLIP, ONT.

42490—Overcharge in weight, settlers' effects, claim 7228 ..... $8 80 — $8 80

AMERICAN STEEL FOUNDRIES, CHICAGO, ILL.

38198—Knuckles $37 91
40456—Knuckle locks ..... $18 34 — $56 25

M. AGAR, THORNLOE, ONT.

39589—Ties $298 92
40016— " 297 42
40020— " ..... 15 60 — $611 94

AMERICAN STEAM GAUGE & VALVE MFG. CO., BOSTON, MASS.

43143—Gauge and check valve ..... $35 20 — $35 20

AURORA METAL COMPANY, AURORA, ILL.

43141—Packing ..... $56 00 — $56 00

WM. ASSAF, ELK LAKE, ONT.

36654—Shortage, one case of pickles, claim No. 5915 ..... $2 35 — $2 35

ALABAMA, TENNESSEE & NORTHERN RAILWAY, MOBILE, ALA.

42920—Car service balance, August, 1913 ..... $5 40 — $5 40

JOHN ANDRECHECK, COBALT, ONT.

38720—Damage to H. H. goods in transit, claim No. 6219 ..... $5 00 — $5 00

MRS. J. ARMSTRONG, UXBRIDGE, ONT.

40232—For S. ½ Lot 7, Con. 2, Calvert—5.3 acres ..... $106 00 — $106 00

ABRAHAM & ABOUD, COBALT, ONT.

41397—Loss dry goods, claim 6783 ..... $13 01
42639— " pair boots, account, pilfered in transit, claim 6782.. 2 95 — $15 96

ADVERTISING & PUBLISHING AGENCY, TORONTO, ONT.

37820—Advertisement in A. O. U. W. Directory ..... $15 00 — $15 00

FRANK ALBERTA, NORTH BAY, ONT.

40531—Full release and discharge, accident claim, April 9th, 1913.	$5 70	
		$5 70

THE ARNPRIOR CHRONICLE, ARNPRIOR, ONT.

40516—Advertising, Cobalt station grounds	$6 80	
		$6 80

ABITIBI PULP & PAPER CO., MONTREAL, QUE.

41615—Meals supplied during May, 1913 (engineering party)....	$35 00	
41464— " month of June, 1913 (engineering party).	8 75	
42565— " " July, 1913 (engineering party).	30 80	
		$74 55

ABRAHAM & SHANKMAN, PORCUPINE, ONT.

41765—Loss candies account, damage to pail, claim 6835	$2 76	
		$2 76

ATLANTIC CITY R. R. CO., PHILADELPHIA, PA.

43248—Car repairs, June, 1913	$1 43	
		$1 43

A. E. ADSHEAD, HAILEYBURY, ONT.

42501—Loss four bottles, broken in transit, claim 6284	$1 08	
		$1 08

ABRAHAM & JOSEPH, COCHRANE, ONT.

42641—Shortage, case boots and shoes with connections, claim 6292	$50 15	
		$50 15

C. ANGUS, CAR REPAIRER, NORTH BAY, ONT.

43575—Expenses, month of September, 1913	$0 25	
		$0 25

BALTIMORE & OHIO RAILROAD, BALTIMORE, MD.

38237—Car Service balance, October, 1912	$98 50	
37140— " " November, 1912	59 50	
37506—Car repairs, bill No. 52911/2 and 3264	33 19	
39115—Car service balance, December, 1912	15 45	
39337—Car repairs, February to August, 1912—September and October, 1912	130 75	
38446—Car repairs, May-September and October, 1912, bill No. 1412	14 21	
38522—Car service balance, January, 1913	9 55	
39256— " " March, 1913	19 90	
41115—Car repairs, December, 1912-January, 1913, bills 4128-4129.	12 46	
40702—Car service balance, May, 1913	80 50	
40916—Car repairs, June 1st to October 28th, 1912	6 90	
40918— " November 2nd, 1912, to February 24th, 1913..	27 28	
42821—Car service balance, July, 1913	10 35	
43249—Car repairs, bill No. 8150-8151	23 16	
42922—Car service balance, August, 1913	37 65	
43250—Car repairs, bill No. 9302, May 31st to June 25th, 1913....	17 30	
		$596 65

BAY OF QUINTE RAILWAY, DESERONTO, ONT.

38249—Car service balance, October, 1912	$0 70	
37150— " " November, 1912	1 05	
39266— " " March, 1913	4 05	
		$5 80

J. E. Burnstead, Cane P.O., Ont.

39683—Refund, demurrage charges, claim No. 6330	$2 00	
40014—Ties	43 92	
40014— "	224 55	
40020— "	116 01	
		$386 48

R. H. Brown & Co., Latchford, Ont.

38722—Loss one box butter, account shortage with connections, claim No. 6293	$12 60	
41767—Loss one bag of wheat, short claim No. 6922	1 53	
42618—Shortage one basket smoked meat, claim No. 5911	14 58	
		$28 71

Buffalo, Rochester & Pittsburg Railway, Rochester, N.Y.

38239—Car service balance, October, 1912	$142 10	
38485—Car repairs, No. 17401	20 39	
37142—Car service balance, November, 1912	143 85	
39027—Car repairs, coll. vo. No. 18126	1 61	
39117—Car service balance, December, 1912	107 10	
38524— " " January, 1913	124 65	
40423—Car repairs, November and December, 1912, bill No. 19260.	61	
39262—Car service balance	224 20	
40704— " "	72 65	
40920—Car repairs, December 25th, 1912, and February 20th, 1913	2 52	
41981—Car service balance, May, 1913	20 65	
42117—Car repairs, bill No. 10832	48	
41732—Car service balance, June, 1913	20 70	
42823— " " July, 1913	21 60	
42924— " " August, 1913	1 80	
43256—Car repairs, bill No. 408	3 27	
		$908 18

Bessemer & Lake Erie Railroad, Pittsburg, Pa.

Voucher.		
38241—Car service balance, October, 1912	$17 85	
38493—Car repairs, bill No. 11921	10 42	
37144—Car service balance, November, 1912	30 80	
39119— " " December, 1912	17 50	
38526— " " January, 1913	182 70	
39264— " " February, 1913	328 50	
40706— " " April, 1913	232 65	
41983— " " May, 1913	129 60	
41734— " " June, 1913	149 15	
42825— " " July, 1913	93 15	
42926— " " August, 1913	45 45	
43450—Car repairs, bill No. 13529	5 62	
		$1,243 39

Berlin Lion Brewery, Ltd., Berlin, Ont.

37509—Refund of icing charges	$10 00	
39649— " " " "	5 75	
39697—Overcharge in weight, Beer claim No. 5478	15 60	
42514— " " " " " No. 6676	15 52	
		$46 87

E. Bale, Car Inspector, North Bay, Ont.

42343—Expenses, June and July, 1913	$5 60	
43572— " October, 1913	4 00	
		$9 60

L. Boivin, Cochrane, Ont.

38960—Overcharge in weight, hay, claim No. 6570	$21 14	
		$21 14

W. Baker, Wah-Tay-Beg, Ont.

40014—Ties	$29 82	
		$29 82

J. H. Brown, Wah-Tay-Beg, Ont.

40014—Ties	$39 96	
		$39 96

Geo. Bowley, c/o New York & Pennsylvania Co., Johnsonburg, Pa.

40156—Siding rebate, February and March, 1913, claims 6832-6880.	$26 00	
41337— " " cars shipped from siding at M.P. 110¾	14 00	
41777— " " siding, M.P. 110¾	8 00	
		$48 00

Begg Brothers, North Bay, Ont.

37991—Dish towelling, cotton, etc	$19 13	
37504—Cotton, cheese cloth, dry goods	17 28	
39307—Towelling	3 00	
38092—Oilcloth	96	
38204—Blankets, towelling, cotton	22 92	
40335—Cotton, towelling, rubber boots	80 30	
39918—Towelling and Oilcloth	4 20	
40741—Dry gooods	61 53	
41019— " "	116 59	
40298—Pillow slips	3 60	
41169—Blankets	8 82	
41104—Rubber boots	31 50	
41250—Bed linen	5 15	
41801—Towelling, mosquito netting, cotton	14 60	
42231—Dry goods	3 00	
41874—Towelling	2 00	
42230— " cotton and boots	42 90	
43155—Oilcloth, cheesecloth	1 30	
43419—Blankets	15 44	
43455— " and towelling	93 72	
42758—Dry goods	13 20	
43508—Rubber boots	6 70	
43596—Sheets, cotton	22 17	
43692—Sheets, towels and cotton	26 15	
		$616 16

Bell Telephone Company of Canada, Toronto.

37577—Telephone service, W. A. Griffin's office and C. L. Ferguson's	$6 85
37659—Toll service, October 21st to November 17th, 1912	24 69
37879—One month's exchange service, yard office to June 30th, 1912, and long distance communications	5 02
36732—Exchange service, January 1st to March 31st, 1913, long distance message and copies of C.O. Directories	99 05
36734—Long distance communications, November, copies Montreal Directory, November, 1912	14 86
37070—Long distance communications, December, 1912	6 95
37822— " " " January 4th, 6th, by S. B. Clement, W. A. Graham	4 55
39087—Exchange service, January 1st to March 31st, 1913, and long distance communications	67 38
38022—Telephone service, phone No. 195, January, 1913	4 10
38320—Long distance communications, North Bay to A. J. McGee, Toronto	85
39741—Long distance communications, phone 127, North Bay	90
39743—Exchange service, April 1st to June 30th, 1913	40 35

BELL TELEPHONE CO. OF CANADA, TORONTO.—*Continued.*

38802—Telephone message to A. J. McGee; exchange service, April 1st to June 30th, 1913, three phones	$26 65	
39947—Message (W. A. Graham), new crossing over T. & N. O. siding	41 02	
39949—Copies Central Ontario Directory and Western Ontario Directory	2 72	
39951—Iron wire, No. 12	6 22	
39018—Exchange service, nine phones at North Bay and long distance messages	75 45	
39528—Telephone interchange, March, 1913	13 81	
40539— " service, April, 1913	3 30	
40541— " " April, 1913 (W. A. Griffin and G. W. Lee)	12 35	
40835— " interchange, April, 1913	1 03	
40837— " service, Toronto, to April 20th, 1913	17 46	
40522—Long distance communication, May, 1913, G. W. Lee, No. 161	5 90	
40524—Long distance communication, May, 1913, W. A. Griffin, No. 195	1 25	
40638—Toll service, S. B. Clement, No. 4	6 25	
41607—Telephone exchange service, as per statement	76 70	
41617— " " " July 1st to Sept. 30th, 1913	24 25	
41336— " " May, 1913, W. A. Graham, No. 131	1 10	
41584—Toll and messenger service to Toronto, July 19th, 1913	1 25	
41618—Exchange service, July 1st to September 30th, and toll service as per statement	55 25	
41620—Toll and messenger service, June 21st to July 20th, North Bay	1 65	
42755—Telephone service, August, 1913, phones 195 and 161, General Office Building	6 20	
42757—Toll service, July 21st to August 20th, 1913, N. B., No. 4	6 10	
42985—Toll and messenger service, N.B. 131, No. 151	2 85	
42496—Difference in rate for exchange service from August 28th to September 31st, 1913	1 28	
42816—Telephone exchange service at North Bay, from October 1st to December 31st ,1913	88 10	
43062—Telephone exchange service at North Bay, phones Nos. 4 and 213, to December 31st, 1913	15 50	
43122—Telephone interchange, August, 1913	33 20	
43376— " " June and September, 1913	32 70	
		$835 09

BUNTIN, GILLIES & COMPANY, LTD., HAMILTON, ONT.

37759—Stationery	$18 35	
38575— "	116 59	
37360— "	42 49	
37502—White and yellow backing paper, office stationery	11 61	
37896—Filing envelopes, memos, pencils	21 93	
38844—Stationery	35 04	
39022— "	29 83	
40211— "	157 79	
39406— "	32 69	
40517— "	18 23	
40791— "	53 02	
40574— "	69 03	
41679— "	2 31	
41903— "	16 27	
42169— "	28 35	
42289— "	53 67	
42082— "	14 26	
42140— "	29 59	
43307— "	29 67	
42870— "	37 75	
43636—Books	16 27	
43754—Pencils	11 15	
		$845 89

R. S. Bradley, Ottawa, Ont.

38816—For N. ½ Lot 3, Con. 3, Calvert, 5.4 acres	$100 00	
		$100 00

Booth-Coulter Copper & Brass Co., Ltd., Toronto.

37500—Copper, Nos. 24 and 26	$15 45	
		$15 45

Peter J. Baechler, Widdifield, Ont.

37809—Lumber, birch	$241 29	
37346— " (2,067 ft. birch)	28 94	
39297— " birch	70 78	
38070— " "	98 63	
41526—Overcharge in rate, lumber, claim No. 6465	11 90	
		$451 54

Buffalo & Susquehanna Railway, Buffalo, N.Y.

38243—Car service balance, October, 1912	$218 75	
38251— " " October, 1912	82 95	
38489—Car repairs, August and September, No. C 177-D 130	40 20	
37146—Car Service balance, November, 1912	121 10	
37152— " " "	16 80	
37426—Car repairs, bill No. E. 45	2 55	
39121—Car service balance, December, 1912	88 20	
38444—Car repairs, bill F. and G., 109-187	342 52	
38528—Car service balance, January, 1913	129 95	
39945— " " "	98 55	
39260— " " March, 1913	770 85	
39268— " " "	350 55	
40708— " " April, 1913	714 55	
40712— " " "	282 15	
41985— " " May, 1913	554 40	
41987— " " "	200 25	
41736— " " June, 1913	767 85	
41738— " " "	318 60	
42262—Car repairs, bill L 139	56	
42264— " bill L 121	52	
42827—Car service, balance July, 1913	591 75	
42835— " " "	247 95	
42928— " " August, 1913	919 35	
42934— " " "	581 40	
43254—Car repairs, bill B 179, April, 1913	8 04	
43446— " bill C 134, June, 1913	36	
43448— " bill No. C 169, May, 1913	7 73	
		$7,458 43

Bank of Ottawa, North Bay, Ont.

36576—Returned draft, No. 3309, Pittsburg & Lake Erie R.R., Pittsburg, Pa.	$2 95
36588—Returned draft, No. 3273, Georgia Railroad, Augusta, Georgia	12 60
36606—Returned draft, No. 3264, Duluth, South Shore & Atlantic Railway	6 30
38539—Returned draft, No. 3321, Niagara, St. Catharines & Toronto Railway	17
37482—Amount of draft returned, New York, Susquehanna & Western Railroad	1 05
38681—Amount of returned draft, draft No. 3418, G. N. Ry.	25 80
39735— " " " draft No. 3534, B. & S. R.R.	1 40
39803— " " " M. & I. B. B. R. R., draft No. 3498	1 05
39841—Amount of draft No. 3476, returned unpaid, C. C. & O. Ry.	2 40
38788—Draft No. 3493, Lexington & Eastern Ry., returned unpaid	1,80
38838—Amount of draft, No. 3549, C. N. & T. P. Ry., returned unpaid	6 30

BANK OF OTTAWA, NORTH BAY, ONT.—*Continued.*

39010—Amount of draft, No. 3579, on Raleigh and Charleston Ry.	$2 70	
40619— " " No. 3741, Wabash Railroad, returned, and draft No. 3999 returned	26 71	
40621—Amount of draft, No. 3645, returned unpaid, Toronto, C. 1110	70	
41332—Amount of draft, No. 3827, July 9th, 1913, returned unpaid, Reid Newfoundland Co.	9 10	
41608—Amount of drafts, Nos. 3932, 3859, 3933, returned unpaid	51 05	
42701—Amount of draft, No. 4064, returned unpaid, P. M. Ry.	29 05	
42979— " " returned unpaid, P. M. Ry., June, 1913	1 85	
42586— " " No. 4164, on St. Louis & San Francisco Railway, unpaid	4 75	
42596—Amount of draft, No. 4085, on Centl. W. Virgina & Southern Railway, unpaid	5 60	
		$193 33

BURROWES & PARMELEE, NORTH BAY, ONT.

40333—Electrical supplies	$59 48	
40743— " "	23 87	
42076—Pipe straps	54	
43506—Lamps	34 20	
43634—Pipe clips	1 20	
43752—Lamps	4 85	
		$124 14

J. BEATH, CAR FOREMAN, NORTH BAY, ONT.

38941—Expenses, January, 1913	$1 00	
41075— " May, 1913	5 40	
43589— " September, 1913	3 85	
		$10 25

W. J. BAULDRY, TOWNSITE INSPECTOR, COCHRANE, ONT.

37707—Travelling expenses, November, 1912	$14 50	
36696—Tools for cleaning streets, new sub-division, Cochrane	2 50	
37348—Travelling expenses, December, 1912	10 00	
38807—Expenses, January, 1913	8 50	
37952— " February, 1913	4 00	
40045— " March, 1913	16 00	
39128— " April, 1913	11 00	
40208— " May, 1913	1 50	
41677— " June, 1913	4 50	
42347— " July, 1913	16 60	
42016— " August, 1913	14 75	
42547—Charges paid Dominion Express Co. on parcel to Toronto	36 95	
43434—Expenses, October, 1913	19 50	
		$160 30

BOSTON & MAINE RAILROAD, BOSTON, MASS.

38245—Car service balance, October, 1912	$23 20	
38491—Car repairs, audit No. D 5763 and D 6167	11 54	
36948—Proportion of expense incurred in securing immigrant business, September, 1912	52	
37072—Proportion of expense incurred in securing immigration business, October, 1912	26	
37320—Ticket balance, November, 1912	25 20	
37428—Car repairs, October, 1912, audit No. D 6671	2 15	
38969— " November bill, D 7103-1-2 and 3	6 46	
38440— " audit No. D 7552	1 88	
38530— " balance, January, 1913	13 95	
38690—Ticket sales, January, 1913	25 50	
39258—Car service, balance, March, 1913	44 55	
39384—Ticket balance, March, 1913	16 67	
40024—Car repairs, audit No. D 8009	78	
41113— " January and February, 1913	1 01	

BOSTON & MAINE RAILROAD, BOSTON, MASS.—*Continued.*

40520—Proportion of expenses incurred securing immigrant business, March, 1913	$0 62	
40858—Car repairs, March 8th to March 19th, 1913	1 45	
41565— " March and April, 1913	4 52	
41158—Proportion of expenses incurred in securing immigrant business, May, 1913	1 50	
42115—Car repairs, bill D 9618	42	
42545—Proportion of expense incurred in securing immigrant business, June, 1913	1 24	
42829—Car service balance, July, 1913	38 78	
43247—Car repairs, June, 1913	51	
42930—Car service balance, August, 1913	14 75	
43252—Car repairs, bill D 10434, June and July, 1913	1 89	
		$239 35

BANNER & OSTROM, NORTH BAY, ONT.

38724—Shortage one case empty bottles, claim No. 5914	$2 35	
40089—Groceries	21 26	
43153— "	1 00	
42666—Supplies furnished private car "Abitibi," August 30th, 1913	4 44	
		$29 05

R. BLAND, WATER SERVICE INSPECTOR, NORTH BAY, ONT.

36688—Travelling expenses, November, 1912	$14 60	
36848— " " December, 1912	19 80	
39009— " " January, 1913	22 05	
37956— " " February, 1912	17 01	
38026— " " June, 1912	14 45	
39987— " " March, 1913	17 00	
39810— " " April, 1913	17 60	
40578— " " May, 1913	10 85	
42341— " " June, 1913	11 15	
42046— " " July, 1913	14 30	
42276— " " August, 1913	17 95	
43587— " " September, 1913	14 25	
		$191 01

E. J. BROOKS & CO., NEW YORK, N.Y.

40085—Car seals	$116 00	
		$116 00

BURROW, STEWART & MILNE CO., HAMILTON, ONT.

39305—Scale cards	$13 75	
38090—Scale weight	40	
40077—Platform scale and tickets	75 32	
39622—Adjusting track scales at North Bay and Latchford	78 50	
41108—Scale tickets	13 75	
		$181 72

L. P. BOUVIER, (NOW) BOUVIER & HUTCHINSON, TORONTO, ONT.

40213—Envelopes	$48 15	
40215— "	37 50	
40705— "	18 00	
		$103 65

BURROWES ADDING MACHINE CO., DETROIT, MICH.

40358—Cleaning adding machine	$1 80	
42668—Ribbon, bill No. 111542, Toronto	1 25	
		$3 05

BEARDMORE BELTING CO., TORONTO.

37989—Leather fillet	$14 40	
37494—Belt laces	17 60	
38857—Belting	24 07	
38846—Leather	12 28	
39020—Belting	30 91	
41017—Belt laces	26 40	
41511*a*—Belting	41 15	
41733*a*— "	18 96	
43113— "	1 69	
43149—Leather fillet	2 40	
43310—Belting	22 45	
		$212 31

JOHN BOURKE, RESIDENT ENGINEER'S STAFF, NORTH BAY, ONT.

37709—Travelling expenses, October, 1912	$7 50	
37811— " November, 1912	1 50	
		$9 00

BUFFALO & SUSQUEHANNA COAL AND COKE CO., BUFFALO, N.Y.

37997—Coal car, G. T. 73565, bill No. E 187	$100 00	
38421—Coal, August 9th, October and November, 1912	7,026 01	
37386—Coal, November and December, 1912	8,149 97	
38731—Coal supplied from November 14th to January 20th, 1913.	13,774 94	
39489— " period January 21st to February 24th, 1913.	6,779 78	
38214— " January and February, 1912	7,898 38	
40413— " February and March, 1913	9,122 90	
39470— " February, March, April, 1913	12,399 93	
39858—Difference amount called for by contract and amount actually shipped	335 84	
39970—Coal supplied as per statement, February 22nd to April 16th, 1913	10,401 30	
41111—Coal supplied as per statement, April and May, 1913	8,245 97	
41295— " " " May, 1913	5,365 08	
41297— " " " April and May, 1913	4,830 30	
40576— " " " May and June, 1913	10,470 22	
40976—Coal, car B. & S. 3324, June 11th, 1913	90 05	
41807—Coal supplied as per statement, June 2nd to July 9th, 1913	6,847 73	
42229—Coal supplied as per statement, June 28th to July 21st, 1913	4,911 15	
42004—Coal supplied as per statement, July 26th to August 1st, 1913	6,571 27	
42042—Coal supplied as per statement, June 28th, 1912, to July 26th, 1913	5,821 94	
42044—Coal supplied as per statement, August 1st, 1913, to August 6th, 1913	3,931 98	
42232—Coal supplied as per statement, July 21st, 1913, to August 13th, 1913	3,805 72	
42719—Coal supplied as per statement, July 30th to August 30th, 1913	3,285 12	
43375—Coal supplied as per statement, May, August and September, 1913	6,222 48	
43533—Car coal, September 5th, 1913, car B. & S. 12401	106 61	
43204—Coal as per statement, September 17th to October 1st, 1913	4,741 99	
43386— " " " October 1st to October 14th, 1913.	4,992 13	
43388— " " " October 14th to October 18th, 1913	2,515 98	
		$158,744 77

BLACK & WAGER, M. P. 81½, T. & N. O. RY.

37995—Slabs	$59 00
38565— "	336 30
39303— "	35 00
39463— "	18 60

BLACK & WAGER, M. P. 81½, T. & N. O. RY.—*Continued.*

39562— "	$51 00	
39860— "	37 00	
40709— "	95 00	
41971—Loading poles	24 75	
42233—Slabs	78 75	
42411— "	150 00	
41876— "	54 00	
41918— "	12 75	
42072— "	54 00	
42138— "	113 25	
43013— "	69 75	
43147— "	42 75	
43305— "	57 00	
		$1,288 90

BUSINESS SYSTEMS, LTD., TORONTO.

37701—Printing night lettergrams	$31 38	
36728—11⅝" x 22", form No. 1512, blank forms 308a and 311	94 11	
38212—Printing night lettergrams	56 90	
38260—Printing forms	34 50	
39746— "	23 00	
41102—Way bills	9 20	
41681—Stationery	55 20	
41920—Lettergram forms	38 00	
42136—Telegram forms	23 00	
43140—Printing forms	110 75	
		$476 04

CHAS. BATTLEY, AIR BRAKE INSPECTOR, NORTH BAY, ONT.

37813—Travelling expenses, November, 1912	$1 25	
36850— " December, 1912	2 35	
38939— " January, 1913	3 10	
39985— " March, 1913	9 10	
39808— " April, 1913	1 20	
41077— " May, 1913	5 95	
41226— " June, 1913	7 15	
42278— " August, 1913	2 85	
		$32 95

THE BUDA COMPANY, HARVEY, ILL.

37757—1" Rich flat bits	$16 74	
		$16 74

JOHN BERTRAM & SONS, CO., LTD., TORONTO.

37993—Gear wheel	$4 10	
38202—Wheel lathe	6 25	
43151—Vise	50 00	
		$60 35

BELL & PRINGLE, HAMILTON, ONT.

36540—In full settlement re Russ and T. & N. O. Ry. claim for alleged injuries, Porcupine branch	$200 00	
		$200 00

BUSY MAN'S, LIMITED, TORONTO, ONT.

41616—Subscription to magazine, one year to April, 1914	$1 00	
42078— " " " March, 1914	1 00	
		$2 00

BANGOR AND AROOSTOOK RAILROAD, BANGOR, MAINE.

38247—Car service balance, October, 1912		$7 35	
37148— " " November, 1912		3 15	
39123— " " December, 1912		1 05	
38532— " " January, 1913		12 60	
39270— " " April, 1913		22 05	
40710— " " April, 1913		90	
42831— " " July, 1913		2 25	
42932— " " August, 1913		44 55	
			$93 90

A. W. BROWN, RELIEVING AGENT, NORTH BAY.

37815—Travelling expenses, November, 1913		$18 00	
36854— " December, 1913		24 75	
38805—Expenses, January, 1913		21 75	
37950— " February, 1913		14 25	
			$78 75

ROBERT BERGER, McCOOL P.O.

40234—For N. ½ Lot 12, Con. 5, Henwood—1.9 acres		$40 00	
			$40 00

JOS. BELLEVUE, COCHRANE, ONT.

39597—N. ½ Lot 5, Con. 6, Lamarche—3.7 acres		$92 50	
			$92 50

T. E. BROWN, HILLVIEW, ONT.

42000—Switch sets		$30 60	
43103*a*— "		10 20	
			$40 80

J. BEGGS, MATHESON, ONT.

40465—Ties		$678 06	
40098— "		165 24	
			$843 30

C. BERNSTEIN, ENGLEHART.

37605—Overcharge rate car of apples, claim No. 5482		$19 92	
39647—Overcharge in weight apples, claim No. 6289		4 75	
41333—Overcharge in weight potatoes, claim No. 6436		4 42	
41335—Overcharge in rate potatoes, claim No. 6721		8 60	
41423—Overcharge in rate fruit, claim No. 6845		11 05	
42510—Overcharge in weight potatoes, claim No. 6861		12 32	
			$61 06

R. G. BOAST, RESIDENT ENGINEER, NORTH BAY, ONT.

38037—Expenses, November, 1912		$8 50	
38803— " January, 1913		15 10	
37954— " February, 1913		5 95	
39989— " March, 1913		12 50	
40811— " May, 1913		14 90	
41224— " June, 1913		15 10	
42349— " July, 1913		15 35	
43075— " August, 1913		18 20	
			$105 60

BALTIMORE & OHIO, CHICAGO TERMINAL RAILWAY, CHICAGO, ILL.

42833—Car service balance, July, 1913		$1 10	
			$1 10

P. Burns & Co., Ltd., Cochrane, Ont.

37927—Supplies furnished survey car No. 60102, October, 1912...	$39 51	
36892—Meat supplied survey car No. 60102, November, 1912....	20 75	
37068—Supplies furnished survey car No. 60102, December, 1912..	20 12	
38913—Supplies, meats, etc., survey car No. 60102, January, 1913 .	24 21	
38382— " " survey car No. 60713, February, 1913	22 12	
39472—Supplies furnished survey car No. 60713, March, 1913....	25 07	
40629— " " " No. 60713, April, 1913....	12 20	
40356— " " " No. 60713, May, 1913	11 05	
		$175 03

R. Bunyan, North Bay, Ont.

38088—Hay . . .	$128 26	
39849—Overcharge in weight, hay, claim No. 6226	84	
40913—Hay . . .	134 20	
42512—Overcharge in weight, hay	73	
		$264 03

John T. Burke, Cobalt, Ont.

39609—Stove casting damaged in transit, claim No. 6217.....	$2 55	
		$2 55

Acton Burrowes, Ltd., Toronto.

41899—Twelve subscriptions, *Railway and Marine World*	$12 51	
		$12 51

Boston & Albany Railroad, New York, N.Y.

37006—Car repairs, September, audit No. 7454.....	$1 01	
40026— " March, July and November, 1912.....	1 42	
41117— " January and February, 1913, bill No. 2214....	1 88	
		$4 31

Buntin, Reid Co., Toronto.

38791—Paper, Cambrai Bond, 17" x 28"—24 lb.	$2 13	
		$2 13

Bureau of Explosives, New York, N.Y.

38024—Accident Bulletin No. 17	$3 00	
40273—Copies of B. E. Accident Bulletin No. 18	7 50	
40275—Assessment No. 12, for six months to April 30, 1913.....	80 45	
39912— " No. 13, six months ending October, 1913	108 21	
41531—Copies B. E. Accident Bulletin No. 19	3 00	
		$202 16

J. H. Bradt, Heaslip, Ont.

37938—Ties	$62 46	
		$62 46

Barber Ellis, Ltd., Toronto.

37987—Envelopes, printed forms 1358 and 1300	$27 28	
38603—Envelopes	38 00	
37496—Envelopes, printed forms 1325 and 1326	70 60	
38210—Envelopes	6 45	
39748— "	75 14	
41106— "	44 00	
42868— "	40 80	
		$302 27

BROWN BROS., LTD., NURSERYMEN, BROWN'S NURSERIES P.O.

41015—Trees	$135 75	
		$135 75

BERLIN FELT BOOT CO., BERLIN, ONT.

39299—Hair felt and harness felt	$29 90	
41803—Hair felt	12 00	
43453— "	18 62	
		$60 52

J. C. BOGART, THORNLOE, ONT.

43103—Switch sets	$67 54	
		$67 54

JOHN BOURKE & CO., NORTH BAY.

41280—Paristone	$0 90	
42074— "	1 70	
43694— "	220 25	
		$222 85

T. D. BORTHWICK, OPERATOR, ENGLEHART, ONT.

39089—Expenses, January, 1913	$3 00	
37948— " February, 1913	21 50	
39812— " April, 1913	14 00	
40210— " May, 1913	4 00	
		$42 50

REV. H. BRUCE, NORTH COBALT.

39651—One bundle chair legs damaged, claim No. 6415	$4 00	
		$4 00

D. W BOSLEY CO., CHICAGO.

38206—Metallic weather strip	$28 50	
43451— " "	14 40	
		$42 90

W. BURNETT, NUSHKA, ONT.

37126—Ties	$47 64	
40465— "	290 67	
40098— "	102 00	
		$440 31

GEO. BEAUREGARD, EARLTON, ONT.

38565—Ties	$59 18	
		$59 18

F. W. BIRD & SON, HAMILTON, ONT.

37498—Building paper	$94 50	
40087— " "	63 00	
41248—Paroid roofing	53 75	
43594—Building paper	26 25	
		$237 50

T. BRYANT, NUSHKA, ONT.

36650—Ties	$47 34	
40465— "	117 63	
		$164 97

BEAVER CONSOLIDATED MINES, TORONTO.

36658—Alleged shortage silver ore from car 57186 in wreck, claim No. 6000	$182 26	
		$182 26

WM. BROWN, NEW LISKEARD, ONT.

37881—Hauling load of roots and vegetables from Fair Grounds to station	$1 25	
		$1 25

WM. J. BOOTH, EARLTON, ONT.

39695—Overcharge in rate, flour, claim No. 6487	$2 37	
42743—Loss, hay, Earlton fire, claim No. 7225	10 06	
		$12 43

G. T. BAILEY, M.D., COCHRANE, ONT.

40422—Professional services rendered—Jos. McCann, deceased	$90 00	
		$90 00

THE BINKLEY CO., NEW LISKEARD, ONT.

39851—Cost of repairing damage to furnace casting, claim 6135	$5 25	
41877—Loss account, shortage one case butter, claim No. 6989	16 00	
		$21 25

DR. W. J. BELL, NORTH BAY, ONT.

38830—Professional services rendered W. LaPlante, April 27, 1913	$25 00	
		$25 00

BEAVERTON CLAY PRODUCTS, LTD., BEAVERTON, ONT.

40452—Tile	$148 20	
		$148 20

BLACK RIVER LUMBER CO., MATHESON, ONT.

38163—Ties	$64 44	
		$64 44

J. BOURGOIS, NUSHKA, ONT.

40100—Ties	$129 96	
		$129 96

A. BAILEY, EARLTON, ONT.

40018—Ties	$133 02	
40020—Switch sets	268 77	
42000—Ties	44 79	
43240*a*—Ties	19 14	
		$465 72

N. BUSS, NUSHKA, ONT.

40465—Ties	$80 10	
		$80 10

J. A. BOUCHER, NUSHKA, ONT.

39589—Ties	$291 36	
40465— "	244 23	
40465— "	286 23	
40098— "	140 49	
		$962 31

J. R. Bailey, Earlton, Ont.

40018—Ties	$41 04	
		$41 04

Birmingham Southern Railway Co., Birmingham, Ala.

38442—Car repairs, auditor's No. 8521, January, 1913	$4 36	
		$4 36

Belt Railway Co. of Chicago.

38487—Car repairs, bill No. 364, August, 1912	$1 20	
41567— " bill No. 329, December, 1912-March, 1913	6 78	
		$7 98

Benson & Bray, Ltd., Midland, Ont.

42080—Maple	$7 35	
		$7 35

J. Bernatches, Cochrane, Ont.

40100—Ties	$222 63	
		$222 63

H. Berger, Iroquois Falls, Ont.

36650—Ties	$29 64	
36650— "	207 90	
37126— "	70 50	
39461— "	450 18	
37938— "	294 24	
40016— "	61 89	
40418— "	41 49	
		$1,155 84

S. J. Bird, Nushka, Ont.

40469—Ties	$91 49	
40100*a*— "	36 25	
43240*a*— "	14 28	
43240*a*— "	4 02	
		$146 04

G. Burton, Matheson, Ont.

39461—Ties	$137 10	
40465— "	47 70	
40098— "	271 86	
40100*a*— "	72 61	
41331—Overcharge in weight, hay	3 25	
41971—Ties	24 20	
		$556 72

F. Brown, Gold Lake P.O., Ont.

40098—Ties	$122 49	
41511— "	138 02	
43240*a*— "	64 60	
		$325 11

W. C. Baker Car Heating Co., Detroit, Mich.

39301—Combination cocks	$25 00	
38208—Generator coils	80 00	
		$105 00

GEO. BRIMSTIN CO., TORONTO, ONT.

36890—Picking lock on vault and making keys for same	$11 00	
37358—Duplicate Yale pad. keys	75	
39530—Padlock and keys	2 35	
		$14 10

M. BOIVIN, IROQUOIS FALLS, ONT.

36650—Switch sets	$134 38	
38163—Ties	600 76	
37126—Lumber	114 24	
37126—Ties	1,705 34	
38565— "	3,886 39	
39461— "	86 93	
39461—Lumber	319 44	
39461—Switch sets	537 63	
39461—Ties	2,065 25	
39463— "	1,218 63	
39589— "	3,174 21	
38262—Lumber	605 23	
40081— "	323 20	
40465—Ties	2,462 30	
40467— "	4,332 20	
39856—Timber	358 73	
40014—Ties	1,151 90	
40707—Car decking	238 17	
41293—Ties	121 25	
40354—White pine	155 36	
40418—Ties	524 93	
40418—Switch sets	89 59	
41511—Ties	212 50	
41511— "	690 37	
41511— "	1,890 51	
41971— "	798 21	
41971— "	1,596 93	
41971— "	134 38	
42000— "	3,146 32	
43103*a*— "	2,453 20	
43421—Lumber	518 30	
43240*a*—Switch sets	256 02	
43240*a*—Ties	985 67	
		$36,879 47

BRITISH WELCOME LEAGUE, TORONTO, ONT.

37575—Donation	$10 00	
42594— "	10 00	
		$20 00

J. BURNS, EARLTON, ONT.

40100*a*—Ties	$22 59	
		$22 59

R. A. BARTLETT, KELSO, ONT.

37126—Ties	$206 79	
39589— "	311 49	
40467— "	192 81	
41971— "	100 00	
42000— "	54 17	
		$865 26

JAMES BOYER, INSPECTOR, TELEGRAPH DEPT., NORTH BAY, ONT.

36852—Travelling expenses, December, 1912	$4 75	
42345— " " July, 1913	11 74	
		$16 49

GEO. BRADFIELD, MASTER MECHANIC'S DEPT., NORTH BAY, ONT.

38227—Expenses, November, 1912	$2 70	
		$2 70

T. BARTLETT, KELSO, ONT.

37126—Ties	$33 12	
39461— "	83 31	
		$116 43

BEAMISH & SMITH, NORTH BAY, ONT.

37492—Uniforms	$512 00	
38086— "	48 00	
39686— "	22 00	
40711— "	448 00	
40300— "	114 00	
41100— "	26 00	
43449— "	22 00	
		$1,192 00

C. F. BROWN, STENOGRAPHER TO SUPERINTENDENT OF TRAFFIC, NORTH BAY.

37957—Travelling expenses, February, 1913	$6 35	
39130— " " March and April, 1913	4 50	
43432— " " October, 1913	6 50	
		$17 35

BUFFALO CREEK & GAULEY, RAILWAY, CLAY, CLAY CO., W. VA.

38536—Car service, balance, January, 1913	$4 05	
		$4 05

R. J. BRITTAIN, THORNLOE, ONT.

40100*a*—Switch sets	$134 40	
43240*a*— "	44 80	
		$179 20

BOWIE & OSTRUM, SOUTH PORCUPINE, ONT.

36586—Donation *re* cow alleged killed, September, 28th, 1912	$25 00	
		$25 00

J. R. BOOTH, OTTAWA.

37925—Timber cut on right of way, held by license	$1,501 35	
39456— " " "	148 80	
40839— " " "	103 74	
41162—Meals and supplies, February 6th to March 13th, 1913	27 48	
42710—Loss, one bag beans, account shortage claim No. 7043	5 20	
		$1,786 57

A. BROWN, COCHRANE.

36660—Damage to wood pellats, claim No. 5838	$10 00	
		$10 00

H. BEATTY, IROQUOIS FALLS, ONT.

36650—Ties	$271 83	
36650— "	225 06	
37938— "	314 28	
41293— "	103 92	
		$915 09

BROWNELL & BELL, HEARST, ONT.

36662—Overcharge in rate, 5 cars cement, claim No. 5932	$37 24	
37696—Overcharge in weight, cement, claim No. 6072	2 40	
		$39 64

A. BRAZEAU, SOUTH PORCUPINE, ONT.

37698—Canadian plate, damaged by wet, claim No. 6259	$33 50	
		$33 50

G. BURNETT, HOMER SIDING, ONT.

40467—Ties	$404 25	
40098— "	307 08	
		$711 33

BRINTON CARPET CO., LTD., PETERBOROUGH.

39560—Carpet	$110 04	
		$110 04

J. M. BARNARD, MILBERTA, ONT.

40020—Ties	$267 89	
40100— "	89 29	
43240*a*—Switch sets	212 01	
43240*a*—Ties	134 38	
43240*a*—Switch sets	44 80	
		$748 37

BASIL BAILEY, CHARLTON, ONT.

40098—Ties	$125 28	
		$125 28

R. BARRON, LTD., TORONTO.

40843—Supplies, car "Sir James" (Inspection trip, Commission)	$69 79	
		$69 79

J. W. BROUGHTON, UNO PARK, ONT.

40418—Ties	$13 77	
		$13 77

BARRETT MANUFACTURING CO., NEW YORK, N.Y.

40714—Car service balance, April, 1913	81	
41740— " " June, 1913	81	
		$1 62

BROTHERHOOD OF FREIGHT HANDLERS AND RAILWAY CLERKS.

39076—Advertisement, souvenir book, 1913	$50 00	
		$50 00

BUTTERWORTH FOUNDRY, LIMITED, OTTAWA, ONT.

39222—Grates for stove	$2 80	
		$2 80

CHAS. BRIGDEN, BONFIELD, ONT.

37589—Progress estimate, October, 1912, Fencing Elk Lake Branch	$233 57	
37591—Provisions furnished at Elk Lake Branch, Nov., 1912	34 92	
37593— " " " " Nov., 1912	33 00	
36698—Labor supplied, Elk Lake Branch	111 13	
39545—Final estimate, work done on contract for fencing	173 01	
39739—Credit note, material and tools returned B/C 16788	107 52	
		$693 15

CHAS. BRIGDEN, BONFIELD, ONT.—*Continued.*

41119—Certificate	No. 1,	Fencing Elk Lake Branch, to May, 1913	$370 83	
41627— "	2,	" " to June, 1913	389 20	
41582— "	3,	" " to July 31, '13	606 73	
42717— "	4,	" " to Aug. 31, '13	730 04	
42818— "	5,	" " to Sept. 31, 1913	943 64	
				$3,040 44

JAS. L. BROWN, COCHRANE, ONT.

41339—Loss, various articles, account shortage claim No. 6261 ..	$20 00	
		$20 00

GEO. W. BOWLAND, LONG VIEW, VIA ELK LAKE.

41160—Meals supplied	$8 50	
		$8 50

T. E. BISSELL, CO'Y., LTD., ELORA, ONT.

41781—Loss, one disc harrow beam, claim 6413	$3 90	
		$3 90

R. W. BEDINGFIELD, NELLIE LAKE, ONT.

41380—Release and discharge from all claims, alleged injury....	$125 00	
		$125 00

J. B. BLAIS, COCHRANE, ONT.

41374—Loss, two bags rice and five bags sugar, claim No. 6232	$44 50	
		$44 50

A. W. BROWN, RELIEVING AGENT, NORTH BAY, ONT.

42705—Travelling expenses, August, 1913	$14 00	
43503— " " September, 1913	9 00	
		$23 00

J. BIRD, NORTH BAY, ONT.

42588—For donation for overcoat alleged destroyed by fire; coal and heater house, North Bay Junction, Dec. 23, 1912..	$25 00	
		$25 00

GEO. M. BRYAN, TORONTO, ONT.

42759—Services in connection with repairs to roof, Cochrane Station, as per cert. No. 3067 of J. M. Lyle.....	$646 63	
		$646 63

CYRIL BEATTY AND GEO. KING, EARLTON, ONT.

42643—Overcharge in weight on engine, claim No. 6987.....	$6 30	
		$6 30

BELL BROS., NORTH BAY, ONT.

42645—Loss four bags flour, damaged by acid, claim No. 7186....	$9 60	
		$9 60

BROTHERHOOD OF RAILROAD STATIONMEN OF NORTH AMERICA, TORONTO, ONT.

42694—Advertisement, "The Canadian Official Year Book of the Brotherhood of Railway Stationmen of North America, 1913"	$25 00	
		$25 00

G. Barone, Boiler Washer, North Bay Junction, Ont.

43106—Travelling expenses, August and September, 1913.....	$3 70	
		$3 70

Sam. W. Brown, Claybelt P.O.

43240*a*—Piles	$1,100 62	
		$1,100 62

Ebenezer Brown, Ottawa, Ont.

42904—Right of way, Elk Lake Branch, N. ½, Lot 5, Con. 6, Barber, 6.15 acres	$65 00	
		$65 00

Fred. Brown, Iroquois Falls, Ont.

43240—Ties	$277 32	
		$277 32

Canadian Pacific Railway, Montreal, Que.

37465—Freight settlement for week ended November 7th, 1912...	$791 68
37547— " " " November 14th, 1912..	3,138 02
37561— " " " November 21st, 1912..	683 43
37641— " " " November 30th, 1912..	2,612 36
36578— " " " December 7th, 1912..	1,893 31
36596— " " " December 21st, 1912..	433 39
36608—Interline freight balance, November, 1912	2,825 08
37999—Fuel, ice, gas and gas keys supplied car "Sir James," August, 1913	5 32
38001—Gas supplied car "Sir James" at Winnipeg, Man., Sept., 1912	1 94
38253—Car service balance, October, 1912	533 29
38393—Ticket balance, September and October, 1912	10,002 35
38401— " October, 1912, Kingston and Pembroke Ry.	12 75
38425—Use of passenger station and facilities at North Bay, November, 1912	805 03
36780—Claims as per statement attached to voucher.....	544 20
38531—Account freight settlement for week ended Jan. 7th, 1913	1,861 34
38537—Freight settlement for week ended January 14th, 1913....	89 00
38541— " " " January 21st, 1913....	1,339 13
37154—Car service balance, November, 1912	443 94
37326—Ticket balance, November, 1912, Kingston and Pembroke..	8 00
38567—Account freight settlement for week ended Jan. 31st, 1913	2,503 36
37432—Car repairs, bill No. 259599 and 262430.....	95 93
37484—Ticket balance, November, 1912	5,894 84
37680—Claims as per statement attached to voucher.....	802 82
38675—Account freight settlement for week ended Feb. 7th, 1913	2,278 46
37692—Freight settlement for week ended February 14th, 1913..	472 49
38845—Interline freight balance, January, 1913	4,805 42
37758—Freight settlement for week ended February 21st, 1913....	2,137 27
37786—Settlement of claims as per statement attached to voucher	126 16
38861—Gas delivered to cars at North Bay, May, 1911.....	55 00
39125—Car service balance, December, 1912	716 94
37864—Freight settlement for the week ended February 28th, 1913	1,143 66
39339—Car repairs, bill No. 269919	37 12
39465—Terminal charges, January, 1913	782 79
39471—Account freight settlement for week ended March 7th, 1913	1,809 89
39485—Freight settlement for week ended March 14th, 1913....	2,264 13
38032—Cleaning car "Temagami" at Ottawa, December 7th, 1912	1 80
39591—Freight settlement week ended March 21st, 1913.....	743 45
39737—Account freight settlement week ended March 31st, 1913..	929 38
39747—Telegraph balance as of January 29th, 1913	4,473 45
39805—Account freight settlement for week ended April 7th, 1913	2,720 86
38538—Car service balance, January, 1913	1,245 50
38692—Ticket sales, December, 1912, and January, 1913	7,432 55
38718—Terminal charges, February, 1913, bill No. 275183.....	781 00
38726—Damage to glass buffet and freight charges, claim No. 6003	1 04

CANADIAN PACIFIC RAILWAY, MONTREAL, QUE.—*Continued.*

38792—Account freight settlement, week ended April 14th, 1913.	$2,304 64
38814—Freight settlement, week ended April 21st, 1913.....	3,490 17
38914—Overcharge double billing, claim No. 5938; overcharge in weight, claim No. 6198; overcharge in rate, claim No. 6077	21 95
38916—Payment of claims, as per statement	104 55
39014—Account freight settlement for week ended April 30th, 1913	352 32
40277—Gas delivered to cars, North Bay, December, 1912.....	59 16
40279—Supplies furnished car "Sir James" at Toronto, Jan., 1913	1 25
40471—Account freight settlement, week ended May 7th, 1913..	182 61
40469—Terminal charges, month of March, 1913	799 61
39162—Claims as per statement attached to voucher	697 73
39164— " " "	181 34
39166— " " "	266 19
39224—Terminal charges, January and February, 1912, bill Nos. 26299, 264417	2,378 91
40521—Account freight settlement, week ended May 14th, 1913..	1,507 26
39272—Car service balance, March, 1912	1,917 98
39386—Ticket balance, March, 1913	6,813 29
40513—Account freight settlement, week ended May 21st, 1913...	2,104 92
40559—Claims as per statement attached to voucher.....	1,017 50
40563—Overcharge in rate, glass, claim No. 6216	9 40
39954—Gas delivered to cars at North Bay, Sept., 1912–Jan., 1913	154 97
39956— " " " Feb., 1913	56 75
40096—Terminal charges, month of April, 1913	826 19
40623—Account of freight settlement, week ended May 31st, 1913	1,347 04
40675—Ice supplied coaches and transhipping loads, North Bay, February, 1913	19 05
40847—Repairs to engine, No. 102	64 96
40987—Crank pin and copper wire, audit No. 264104.....	19 07
40134—Damage to pump in transit, claim No. 6324	6 25
40160—Claims as per statement attached to voucher	239 13
40194—Account freight settlement, week ended June 7th, 1913....	706 71
40226—Freight settlement, week ended June 14th, 1913.....	406 94
40294— " " " June 21st, 1913	719 57
41231—Account Inter-line freight balance, May, 1913	1,801 51
41251—Car repairs, November, 1912, to April, 1913–November, 1912, to February, 1913–July to September, 1912, bills Nos. 276110-1-2	178 73
40586—Gas in C. P. R. sleepers when delivered to this line, Nov., 1912	58 02
40640—Telegraph interchange balance, May, 1913	478 44
40716—Car service balance, April, 1913	1,126 05
40842—Ticket balance, April 13, 1913	2,798 44
40860—Car repairs, April 11th, to Dec. 5th, 1912	56 30
40984—Supplies furnished exhibition car at Muskoka.....	80
41325—Terminal charges, May, 1913	809 20
41453—Claims as per statement, 1911–1912–1913	147 09
41503—Account freight settlement, week ending July 7th, 1913..	798 75
41294—Machine bolts, hose, bill Nos. 276664-276663	17 83
41314—Foreign telegraph balance, January to April, 1913.....	1,566 96
41683—Account freight settlement, week ending July 14th, 1913..	839 17
41795— " " " July 21st, 1913..	387 84
41821—Account inter-line freight balance, June, 1913	1,036 81
41973—Account freight settlement, week ending July 31st, 1913..	2,370 54
41368—Terminal charges, June, 1913	793 81
41989—Car service balance, May, 1913	931 19
41586—Gas supplied cars at North Bay, March, 1913.....	64 88
41588— " " April and May, 1913...	123 11
41610—For amount freight settlement, week ended Aug. 14th, 1913	1,553 93
41644—Claims as per statement attached to voucher	154 39
41676—Account freight settlement, week ended August 21st, 1913	392 68
41680—Ice supplied private car "Abitibi" at Toronto	50
42471—Inter-line freight balance, July, 1913	4,318 75
42495—Terminal charges, month of July, 1913	841 38
41742—Car service balance, June, 1913	1,039 63
41858—Ticket balance, June, 1913	4,200 67

CANADIAN PACIFIC RAILWAY, MONTREAL, QUE.—*Continued.*

42070—Account freight settlement for week ended Aug. 31st, 1913	$325 88	
42497—Claims as per statement attached to voucher	153 67	
42703—Account Freight settlement, week ended Sept. 7th, 1913..	134 66	
42725— " " " Sept. 14th, 1913.	30 78	
42837—Car service balance, July, 1913	1,325 08	
42943—Ticket balance, July, 1913	1,217 56	
42386—Terminal charges, month of August, 1913	834 33	
42448—Account inter-line freight balance, August, 1913	2,839 22	
42454—Sheet steel and superheater pipes, bills 277385-278619....	9 41	
42500—Supplies furnished private car "Abitibi" and "Sir James," June, 1913	1 75	
43183—Freight settlement, week ended September 30th, 1913....	2,930 15	
43259—Car repairs and car destroyed	430 52	
42672—Gas supplied at North Bay, month of June, 1913	64 87	
42696—Freight settlement for week ended October 7th, 1913....	842 92	
42712—Overcharge in rate, silver ore, claim No. 7107	67 98	
42820—Account freight settlement, week ended October 14th, 1913	1,526 87	
43619—Terminal charges, month of September, 1913	1,102 01	
42906—Account freight settlement, week ended October 21st, 1913	1,379 31	
42936—Car service balance, August, 1913	1,517 22	
43046—Ticket balance, August, 1913	1,804 29	
43625—Account inter-line freight balance, September, 1913	2,382 28	
43308—Freight settlement for week ended October 31st, 1913....	3,313 38	
43318—Rivets and gaskets, bills No. 300812 and 300859	5 59	
43558—Freight settlement for week ended September 21st, 1913..	1,194 64	
43560—Car repairs, bill No. 300743, value of C. P. car, box 70966, destroyed June 30th, 1913; supplies furnished car "Sir James" at Toronto, June 14th	570 21	
43618—Rivets, bill No. 300805	4 54	
43790—Account inter-line freight balance, October, 1913	4,802 62	
43792—Terminal charges, month of October, 1913	671 58	
43798a—Foreign telegraph balance	2,905 82	
		$164,332 82

CANADIAN OFFICE & SCHOOL FURNITURE CO., LTD., PRESTON, ONT.

37508—Office desk	$29 25	
39327—Ticket case and locks	39 25	
38226—Office desk	29 25	
40169— "	18 00	
43315—Ticket case	7 25	
43610— "	42 50	
		$165 50

CHICAGO & NORTH WESTERN RAILWAY, CHICAGO, ILL.

38275—Car service balance, October, 1912	$10 50	
37014—Car repairs, August, 1911, to January, 1912, No. 30068; June, July, August, 1912, No. 100084	22 25	
37178—Car service balance, November, 1912	28 70	
39137— " " December, 1912	28 50	
38464—Car repairs, audit No. 120164, September, 1912	7 78	
38558—Car service balance, January, 1913	35 35	
38698—Ticket sales, January, 1913	8 61	
41239—Car repairs, November, 1912, to January, 1913	2 05	
40922— " October 11th, 1911, to September 19th, 1912..	52 80	
40924— " September and October, 1912	13 47	
40932— " November 7th, 1912, to February 20th, 1913..	11 58	
41581— " January to March, 1913, audit No. 50518....	7 89	
41768—Car service balance, June, 1913	4 05	
42334—Car repairs, bill No. 60075	6 88	
43209— " bill No. 70519	9 70	
43262— " bill No. 90051	6 44	
		$256 55

CANADIAN NORTHERN ONTARIO RAILWAY, TORONTO.

38386—Car repairs, stores No. 1136, No. 1058 ..	$6 64	
38542—Car service, balance January, 1913	22 20	
39176—Overcharge on car lumber, claim No. 6498	27 50	
40042—Car repairs, Nos. 7587 and 7601	147 24	
41233—Car repairs, February, 1913, Nos. 7979-7976	3 28	
43544—Car repairs, bill No. 213	44	
		$207 30

C. H. CULVER, KELSO, ONT.

37126—Ties	$53 58	
42000— "	48 00	
		$101 58

CAMBRIA & INDIANA R.R., PHILADELPHIA, PA.

41778—Car service, balance June, 1913	5 40	
		$5 40

CUMBERLAND VALLEY RAILROAD, CHAMBERSBURG, PA.

38281—Car service balance October, 1912	$1 40	
39145—Car service balance December, 1912	1 05	
38562—Car service balance January, 1913	90	
41579—Car repairs audit, No. 16767	1 43	
42013—Car service balance May, 1913	90	
42962—Car service balance August, 1913	1 35	
		$7 03

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS RY., CINCINNATI, OHIO.

48439—Car repairs, auditors, No. 53620	$14 84	
39033—Car repairs, No. 57758, May to October, 1912	2 55	
38696—Ticket, balance January, 1913	2 87	
41235—Car repairs, December, 1912, Bill No. 62130	1 43	
42129—Car repairs, Bill No. 70209	2 34	
43211—Car repairs, Bill No. 74611	1 44	
43210—Car repairs, Bill No. 76623	4 60	
		$30 07

CHESAPEAKE & OHIO RAILWAY, RICHMOND, VA.

38263—Car service, balance October, 1912	$2 80	
38497—Car repairs, No. 307087	15 53	
37170—Car service, balance November, 1912	2 10	
39129—Car service, balance December, 1912	4 55	
38548—Car service, balance January, 1913	21 15	
41237—Car repairs, April to October, 1912, No. 317401	5 78	
40728—Car service, balance April, 1913	13 50	
40928—Car repairs, March 4th and March 19th, 1913	1 10	
42003—Car service, balance May 1913	27 90	
41760—Car service, balance June, 1913	13 05	
42268—Repairs to cars, Bill No. 32264	1 20	
42851—Car service, balance July, 1913	38 25	
42310—Car repairs, Bill No. 321183	3 45	
42950—Car service, balance August, 1913	4 40	
43212—Car repairs, Bill No. 324571	1 76	
43454—Car repairs, Bill No. 326098	1 94	
		$158 46

CHICAGO, MILWAUKEE AND ST. PAUL RAILWAY, CHICAGO, ILL.

38255—Car service balance, October, 1912	$19 60	
38499—Car repairs, bill No. 121205	6 58	
37016— " August and September, 1912, bill No. 122362	10 60	
38452— " bill No. 124092	15 70	

CHICAGO, MILWAUKEE AND ST. PAUL RAILWAY, CHICAGO, ILL.—*Continued.*

38694—Ticket sales, January, 1913	$29 61	
40038—Car repairs, bill, No. 126175	17 36	
40844—Ticket balance, April, 1913	44 54	
41575—Car repairs, audit No. 128347, Dec., 1912, to March 17, 1913	44 73	
41577— " " 128343, September, 1912	1 42	
41390—Refund of duty collected by Navigation Co., claim 6884..	6 41	
42330—Car repairs, bill No. 129514	2 11	
43255— " April, 1913	1 57	
43268— " bill No. 131425	4 91	
43456— " bill No. 132045	12 54	
		$217 68

CHICAGO, INDIANIA AND SOUTHERN RAILROAD, CLEVELAND, OHIO.

40044—Car repairs, December, February, 1913, No. 51759	$28 95	
41125— " March, 1913, bill No. 53055	11 57	
42123— " April, bill No. 55044	1 86	
		$42 38

CENTRAL VERMONT RAILWAY, ST. ALBANS, VT.

38265—Car service, balance October, 1912	$49 35	
38495—Car repairs, July and August, bills 8-12-440-9-12-438	6 30	
37172—Car service, balance November, 1912	42 70	
37430—Car repairs, bill No. 10-12-489	4 47	
39035— " bill No. 11-12-510	7 08	
39131—Car service balance, December, 1912	16 85	
38450—Car repairs, bill No. 12-12-600	5 60	
38550—Car service, balance January, 1913	32 55	
39276—Car service balance, March, 1913	54 65	
39388—Ticket balance, March, 1913	8 42	
41243—Car repairs, March, 1913, bill No. 3-13-548	1 36	
40730—Car service balance April, 1913	19 50	
40864—Car repairs, March, 1913	1 69	
42005—Car service balance, May, 1913	11 25	
41762— " " June, 1913	13 95	
41860—Ticket balance, June, 1913	4 18	
42853—Car service balance, July, 1913	18 00	
42312—Car repairs, bill No. 6-13-426	58	
43201— " bill No. 7-13-440	40	
42952—Car service balance, August, 1913	24 75	
		$323 63

CHICAGO, INDIANAPOLIS AND LOUISVILLE RAILWAY, CHICAGO, ILL.

38277—Car service balance, October, 1912	$8 40	
37182— " " November, 1912	7 35	
39141— " " December, 1912	11 90	
38560— " " January, 1913	12 15	
39288— " " February, 1913	13 05	
40740— " " April, 1913	6 75	
42011— " " May, 1913	4 05	
41770— " " June, 1913	18 45	
42859— " " July, 1913	17 55	
43207—Car repairs, bill No. R 5524	1 32	
		$100 97

AGENT AT COBALT STATION.

37543—Outstanding account, shortage shipment machinery, claim No. 3664	$4 49
36664—Outstanding account, shortage ore sacks, claim No. 5811	2 21
36822— " " " dry goods, claim 5806	1 14
38739—Water supplied from Cobalt water commission, quarter ending March 31st, 1913	22 50

AGENT AT COBALT STATION.—*Continued.*

37800—Outstanding account, posts refused, claim No. 6141	$13 50	
37802— " " bursting of carboy acid, claim No. 5615	2 35	
39617— " " shortage one case shirts, claim No. 6298	72	
39855—Outstanding account, demurrage, claim 6385	11 00	
39178— " " shipment short claim, No. 6581	1 22	
39536—Water rate paid water commission, quarter ending June 30th, 1913	18 00	
40130—Outstanding account, shipment cement refused, claim No. 6777	183 54	
40132—Outstanding account, demurrage on shipment cement, claim No. 6777	72 00	
41489—Outstanding account, car billed in error, claim No. 6923.	56 00	
41965—Amount paid Cobalt Water Commission for quarter ending September 30th, 1913	18 00	
41400—Outstanding account, goods short, claim No. 6970	72	
41402—Overcharge in rate on pipe, claim No. 6679	279 99	
41404—Outstanding account, shortage iron, claim No. 6068	1 11	
42525— " " goods short, claim No. 6618	2 13	
43077—Disbursements for supplies furnished car "Sir James," March and June, 1913	1 03	
42740—Outstanding icing charges account, error in billing claim No. 7364	7 50	
43208—Amount paid Cobalt Water Commission for water rate for quarter ending December 31st, 1913	18 00	
		$717 15

CENTRAL ONTARIO RAILWAY, TRENTON, ONT.

37168—Car service balance, November, 1912	$0 70	
38546— " " January, 1913	8 10	
		$8 80

E. D. CHAMBERLIN, COCHRANE, ONT.

49599—R. of W. S. ½ Lot 5, Con. 6, Lamarche, 7.1 acres	$106 50	
		$106 50

COLLECTOR OF CUSTOMS, NORTH BAY.

37585—Duty on coal, etc., month of November, 1912	$2,606 76	
36640— " month of December, 1912	2,260 91	
38635— " month of January, 1912	3,795 67	
37866—Duty on coal, oils, waste, etc. month of February, 1913 ..	2,438 75	
39801— " " " " March, 1913	4,650 52	
39012—Duty on coal, etc., month of April, 1913	6,316 84	
40773— " " May, 1913	4,862 80	
40854— " from May 27th to June 26th	3,714 17	
42167— " month of July, 1913	3,374 21	
42068— " " August, 1913	5,420 76	
43105— " " September, 1913	2,540 74	
43302— " " October, 1913	3,315 67	
		$45,297 80

CHAMANDY BROS., COBALT, ONT.

38866—Loss one suit case and one trunk, claim No. 6240.....	$7 35	
38870—Overcharge in rate, shoes claim No. 6556	7 72	
		$15 07

CENTRAL INDIANIA RAILWAY, ANDERSON, IND.

41750—Car service balance, June 1913	$ 45	
		$ 45

CLEVELAND, SARNIA SAW MILLS, SARNIA, ONT.

38964—Overcharge in weight, horses	$19 04	
38966—Overcharge in rate, coal, claim No. 6143	4 20	
		$23 24

THE CANADA PAINT CO., LTD., MONTREAL, QUE.

37767—Paints, varnishes, turpentine, etc.	$174 91	
37516—Paints, varnishes, etc.	204 18	
39321— " "	425 38	
38116—Paints lead, etc.	35 59	
38278—Paints	130 33	
40175— "	106 70	
39570—Paints, oils, etc.	64 48	
39932— " "	264 06	
40751—Paints	108 50	
40795— "	27 93	
40326— "	135 00	
41288—Discount deducted in error, May 21st, 1913	57	
41823—Paint	59 54	
42485—Paints, varnish, oils, etc.	269 45	
41878—Paints	365 07	
42745—Loss two boxes paint, Earlton fire	15 43	
42452—Lacquer and paints	108 42	
43175—Paint	3 50	
43519—Paint varnish, etc.	56 86	
42772—Paints	75 28	
43148— "	110 00	
43608— "	83 42	
43702— "	148 77	
		$2,973 37

CANADIAN CAR SERVICE BUREAU, MONTREAL, QUE.

37887—Proportion of cost of operation expenses, October, 1912..	$20 85	
37889— " " November, 1912	19 15	
36956— " " December, 1912	21 13	
38695— " " January, 1913.	21 90	
39751— " " February, 1913.	27 82	
40223— " " March, 1913 ..	26 20	
39624— " " April, 1913 ...	26 23	
40528— " " May, 1913	29 65	
41533— " " June, 1913	23 50	
41622— " " July, 1913	24 15	
42761— " " August, 1913 ..	21 40	
42822— " " September, 1913	19 16	
		$281 14

JAS. CONDIE, HEASLIP, ONT.

40020—Ties	$47 54	
40100— "	15 85	
		$63 39

F. CHARPENTIER, CONNAUGHT, ONT.

42000—Telegraph poles	$32 00	
43103*a*— "	89 00	
		$121 00

CANADIAN LOCOMOTIVE COMPANY, LIMITED, KINGSTON, ONT.

38094—Bell complete, pistons	$155 75	
40165—Hangers, smokestacks	115 00	
40971—Locomotive parts	257 50	
41029—C. I. pipes	15 50	
40328—Footplates	356 00	
41817—Eccentric straps, footplates	327 00	
43029—Repair parts	235 00	
43461— "	266 20	
43616—Locomotive fittings	164 60	
		$1,892 55

BERNARD CAIRNS, TORONTO, ONT.

40639—Rubber stamp	$0 20	
40779—Ink pad	0 25	
41626—Pica dates	0 50	
		$0 95

COAL AND COKE RAILWAY, ELKINS, W. VA.

39286—Car service, balance, March, 1913	$11 70	
40726— " " April, 1913	2 70	
42849— " " July, 1913	15 75	
42948— " " August, 1913	6 30	
		$36 45

CHICAGO, NEW YORK AND BOSTON REFRIGERATOR CO., CHICAGO, ILL.

38271—Car service, balance, October, 1912	$1 54	
37176— " " November, 1912	0 72	
39135— " " December, 1912	4 87	
38556— " " January, 1913	0 31	
42857— " " July, 1913	10 27	
42958— " " August, 1913	4 63	
		$22 34

CANADIAN GENERAL ELECTRIC CO., LTD., TORONTO, ONT.

38055—Electrical supplies	$16 68	
37514— "	109 35	
38114— "	42 78	
38218— "	5 98	
40339— "	112 99	
39460— "	45 92	
40977—Steel fixtures	4 05	
40304—Crossarm braces	118 00	
42244—Electric supplies	30 30	
43523—Crossarm braces, electrical material	63 98	
42766—Meters	30 88	
43644—Electric supplies	66 27	
		$647 18

CANADIAN FAIRBANKS-MORSE COMPANY, LIMITED, MONTREAL, QUE.

37765—Water tanks	$983 00	
36894—Gauge glasses, Garlock and Palmetto packing	78 68	
38701—Gauge glasses and trident meter	74 61	
38703—Tank fixtures, water tank, valves, etc.	942 50	
37704—Overcharge in weight and rate, lumber claim, No. 6048	9 95	
38104—Packing	28 43	
40219—Packing valves, taps and drills	120 76	
39458—Jack screws	8 10	
40963—Tamping picks	15 30	
40965—Grates for concrete mixer, file No. 5935	4 65	
41033—Gauge glasses	13 61	
40310—Filing clamps	37 50	
40312—Sleeves	32 14	
41122—Track gauges and sleeves	39 00	
41783—Overcharge in rate, pulleys	44 40	
41811—Gauge glasses	23 13	
42247—Thread chasers	4 28	
42477—Machine nut taps	2 66	
42242—Pipe fittings	38 56	
42396—Packing	36 73	
43023—Pumper, tank hoops and plates	1,318 84	
43159—Clay picks	27 20	
43537—Pipe fittings	41 50	
		$3,925 53

CHICAGO, GREAT WESTERN RY., ST. PAUL, MINN.

38269—Car service, balance, October, 1912	$11 55	
37174— " " November, 1912	30 45	
39133— " " December, 1912	18 20	
38552— " " January, 1913	0 90	
40736— " " April, 1913	0 90	
40862—Car repairs, Dec. 4th, 1912, to Jan. 23rd, 1913	4 11	
41583— " Feb. 5th, audit No. 45301	2 44	
42007—Car service, balance, May, 1913	9 00	
41766— " " June, 1913	12 15	
42314—Car repairs, April, 1913	22 89	
43265— " June, 1913	5 23	
42954—Car service, balance, August, 1913	9 45	
43266—Car repairs, bill No. 44228	2 48	
		$129 75

CANADIAN FREIGHT ASSOCIATION, TORONTO, ONT.

37891—Proportion of expenses, October, 1912	$7 69	
37893— " " November, 1912	8 42	
36952— " " December, 1912	7 80	
38735— " " January, 1913	7 84	
38328— " " February, 1913	9 22	
39120— " " April, 1913	9 00	
39122— " " March, 1913	18 22	
39630—10 copies Canadian Classification, No. 15	2 50	
40532—Proportion of expenses, May, 1913	9 40	
40534— " " May, 1913 (supplementary)	1 50	
41164— " " June, 1913	10 05	
41500— " " July, 1913	10 38	
41684—50 copies Supplement 1 to Canadian Freight Classification No. 16	2 50	
42771—Proportion of expenses, August, 1913	8 92	
42670— " " September, 1913	9 08	
		$122 52

CANADA METAL COMPANY, LTD., TORONTO.

38045—Zincs and coppers	$81 09	
37512—Babbitt metals	80 19	
39315—Pig lead	54 23	
38228— "	16 72	
39576—Battery coppers	13 47	
39764—Metals	79 49	
40967—Babitt	37 99	
40969—Babitt metals	80 00	
40320—Pig lead	23 38	
41130—Metals	74 96	
41819— "	43 13	
42293—Battery zincs	55 80	
41922—Metals	43 35	
43157— "	17 50	
43521—Pig lead	19 15	
42774—Metals	41 12	
		$761 57

CANADA IRON CORPORATION, LTD., MONTREAL, QUE.

37583—Castings, wheels, and freight on patterns	$2,492 79
38005—20" pipe, 30", 550 lbs., tender wheels for 4¼ x 8 journals.	797 39
37684—Castings, patterns	342 55
39323— " "	29 58
39325—Axles, wheels and patterns	568 83
38120—Steel castings and patterns	136 14
38270—Castings	191 36
38272—Freight charges on two boxes patterns	1 21
38804—Freight charges	154 95

CANADA IRON CORPORATION, LTD., MONTREAL, QUE.—*Continued.*

39953—Casting, as per statement	$1,690 68	
39026—Castings	172 22	
40487—18", 220 lbs. single plate wheels	1,268 73	
39694—Castings, patterns	17 40	
40973—Iron	289 06	
40975—Wheels	132 78	
40240—Freight on patterns returned	1 44	
40262—Castings	285 57	
41121—Patterns, wheels, etc.	199 38	
40460—Freight car wheels	371 68	
40580—Iron	139 50	
41124—Car wheels and freight on patterns	1,356 66	
41260—Iron	248 36	
41286—Car wheels	1,424 20	
41815—Iron	92 63	
42413—Wheels	160 29	
41930—Freight charges on patterns	0 83	
43019—Castings, wheels	124 39	
43121— " brake wheels, etc.	174 69	
43525— " wheels	183 82	
43394—Wheels	345 76	
43612—Freight charges paid on crate patterns received October 9, 1913	61	
43756—Castings	89 19	
		$13,484 67

CANADIAN PACIFIC RAILWAY COMPANY'S TELEGRAPH, TORONTO.

37469—Telegraph service, April and May, Toronto office	$8 88	
37885—Telegraph service, month of October, 1912	6 66	
38427—Messages, Nov. 11th, 12th	2 30	
36950—Telegraph service, September, October and November, 1912	38 93	
37074— " " December, 1912	3 43	
37388—Message, telegraph service, Detroit, Mich.	95	
38743—Telegraph service, December, 1912, North Bay	14 35	
38863—Telegraph service	9 75	
38973—Messages-service, month of January, 1913	1 97	
38324—Telegraph service, month of February, 1913	2 50	
39749— " " " January, 1913, North Bay	10 85	
40225— " " " February, 1913, "	10 46	
40281— " " " March, 1913, Toronto	1 97	
39474— " " " March, 1913	2 56	
39478— " " " March, 1913, at North Bay	7 15	
40633— " " " April, 1913 "	5 84	
40777— " " " April, 1913, Toronto	4 02	
40360—Messages, April, 1913, Toronto office	1 96	
40584—Services at North Bay for April, 1913	5 88	
40642—Telegraph service, May, 1913, North Bay	1 98	
40980— " " May, 1913, "	5 21	
41468—Message, telegraph service, July 28th, 1913	5 25	
41592—Telegraph service, July, 1913, North Bay	3 32	
42549— " " June 10, 28, 1913	2 96	
42611— " " month of June, 1913	4 38	
42767— " " August 1 to 6th, 1913	1 32	
42769— " " August 2 to 28	4 54	
42498— " " August, 1913	8 37	
42824—Message, telegraph service, September 26th, 1913	45	
43124—Messages, telegraph service, September, 1913	1 99	
43206—Telegraph service	6 40	
		186 58

COLLINGWOOD PACKING CO., COLLINGWOOD, ONT.

37515—Loss, one veal, account damage claim No. 5904	$7 70	
		$7 70

CANADIAN EXPLOSIVES, LTD., COBALT, ONT.

37511—Balance due account overcharge movement over Kerr Lake Branch	$2 26	
37513—Overcharge weight on dynamite, claim No. 5265	12 87	
38053—Fuse and dynamite	184 75	
37522— " "	268 98	
37700—Refund of 15% on explosives, claim No. 6152	9 53	
39699—Overcharge in rate, claim No. 6201	12 28	
39701— " " " No 6218	12 70	
38274—Dynamite	269 13	
42762—Fuse, etc.	20 96	
		$793 46

R. W. CHISHOLM & COMPANY, BUFFALO, N.Y.

39703—Overcharge demurrage, claim No. 6481	$81 00	
		$81 00

CHICAGO, MILWAUKEE & PUGET SOUND RY., CHICAGO, ILL.

38279—Car service, balance, October, 1912	$11 20	
37184— " " November, 1912	5 25	
39143— " " December, 1912	3 50	
40028—Car repairs, Bill No. 36173	66	
		$20 61

COLD BLAST TRANSPORTATION CO., CHICAGO, ILL.

40724—Car service balance, April, 1913	$1 69	
		$1 69

CHICAGO, PEORIA & ST. LOUIS RY., SPRINGFIELD, ILL.

41746—Car service balance, June, 1913	$3 15	
42332—Car repairs, bill No. 2027	1 19	
		$4 34

CHICAGO, BURLINGTON & QUINCY RAILROAD, CHICAGO, ILL.

38273—Car service balance, October, 1912	$23 45	
38505—Car repairs, No. 30390	59	
37008— " " August, 1912, audit No. 57262	1 30	
39037— " " January, 1913, " " 60211	33	
39041— " " August to October, 1912, R 31525	3 77	
38462— " " auditors, No. 61270	85	
38498— " " " No. R 32010, R 32011	14 52	
39280—Car service balance, March, 1911	27 05	
39692—Car repairs, November, 1912	6 24	
40030— " " auditors, No. R W 5727	1 51	
41249— " " December and January, 1912-1913	14 10	
40734—Car service balance, April, 1913	15 30	
41571—Car repairs audit, No. 33743, Dec., 1912-Jan., 1913	15 58	
41396—Overcharge in silver ore, claim 5958	2 00	
42945—Ticket balance, July, 1913	5 83	
42324—Car repairs, bill No. R 34211	15 18	
43261— " " April to June, 1913, audit R 34421	25 29	
43264— " " bill, R 34893	7 78	
		$180 67

CANADIAN WESTINGHOUSE COMPANY, LTD., HAMILTON, ONT.

37895—Armature and air brake supplies	$167 59
37540—Air brake material	539 61
37826—Armature and air brake supplies	76 06
39091—Air brake material	136 30
38028— " " "	42 01
38222— " " "	13 35
40067— " " "	53 52
38834— " " "	461 28

CANADIAN WESTINGHOUSE COMPANY, LTD., HAMILTON, ONT.—*Continued.*

39028—Electric material	$179 86	
39408— " "	158 53	
40547—Air brake material	83 72	
40979— " " "	185 85	
40981—Feed valve and tools	15 79	
40983—Air brake parts	31 20	
41031—Engine fittings	82 50	
40266—Air brake material	146 29	
41143—Installing coils	138 77	
40330—Steam cylinders	11 25	
41134—Bolts and nuts, piston rings	8 95	
41258—Engine fittings	7 87	
41282—Couplings	140 62	
41833—Gaskets, piston rings and pistons	73 31	
42237—Air brake and electrical material	25 26	
42487—Air brake material	73 08	
42188— " " "	66 23	
42394— " " "	67 69	
43021— " " "	20 13	
43167— " " "	55 05	
43539—Fittings	146 88	
42770—Air brake material	57 00	
43510— " " "	30 15	
43602—Engine fittings	103 02	
43704—Air brake material	8 21	
		$3,406 93

B. J. COUGHLIN & COMPANY, MONTREAL, QUE.

38071—Springs	$3 70	
37520— "	66 34	
39309— "	77 88	
38106— "	10 00	
40167—Springs and chain	275 53	
39578—Coil springs	3 00	
39752—Springs and chain	38 34	
39862—Waire tail ropes for van equipment	79 50	
40749—Wrecking chains	55 41	
41171—Springs, jim crows, spirals	145 60	
41292—Drawbar springs	48 13	
41843—Springs, bars, crowbars and chains	52 92	
41907—Springs	48 00	
42235—Cables, wire	14 10	
43119—Tail pockets	225 10	
43696—Springs	5 50	
		$1,148 95

JAMES A. COLE & CO., NORTH BAY, ONT.

37883—Supplies furnished, lath, storm sash, dressing, etc., October, 1911, to May, 1912	$237 25	
38075—Shiplap and building material	146 41	
37524—Portable station	55 37	
39333—Section house	315 01	
38096—Sash, door, desk, counter and door	32 95	
38266—Moulding	7 50	
39922—Sash	6 00	
40713—Building material	72 54	
40238—Doors and section house	481 50	
41112—Turned rollers	24 50	
42297—Sash, section house	475 86	
42152—Building material	35 36	
43015—Section house material	210 00	
43423—Sash, lath	8 90	
		$2,109 15

CONSOLIDATED CAR HEATING CO., ALBANY, N.Y.

38073—Steam heat fittings	$350 00	
39313—Valves, repair parts	108 90	
		$458 90

A. A. COLE, MINING ENGINEER, COBALT, ONT.

Services rendered Commission, Nov. 1st, 1912, to Oct. 31st, 1913..	$3,300 00	
Expenses account during period	167 83	
		$3,467 83

CANADA MACHINERY CORPORATION, LTD., GALT, ONT.

39329—Band saw blade	$20 33	
43614—Shop tools	43 46	
43762—Repair parts	3 50	
		$67 29

CANADA FOUNDRY CO., TORONTO, ONT.

38859—C. I. pipe	$533 67	
40137—Swinging cables	33 55	
39024—Jack arm nuts	34 40	
39930—Repair parts	52 70	
42398—W. I. chain	96 25	
		$750 57

CANADIAN BRONZE CO., LTD., MONTREAL, QUE.

38049—Brass castings, journal bearings, etc.	$945 15	
37682—Brass castings	879 90	
39353— "	574 46	
38100— "	534 99	
38230— "	9 80	
38280— "	35 32	
40221— "	590 16	
39228— "	618 81	
39414— "	962 72	
40428— " as per statement	499 22	
41128— "	650 22	
41809— "	424 20	
42291— "	117 04	
42142— "	42 68	
42388— "	5 95	
43117— "	89 54	
42776— "	27 83	
43706— "	363 05	
		$7,371 04

CINCINNATI, HAMILTON & DAYTON RAILROAD, CINCINNATI, OHIO.

38267—Car service balance, October, 1912	$20 65	
37012—Car repairs, September, 1912, reg. No. 6949	1 38	
38460— " December, 1912	51	
39278—Car service balance, March, 1912	2 85	
40046—Car repairs, No. 448 and 652	7 66	
40919— " February, 1913, bill No. 2945	2 81	
40732—Car service balance, April, 1913	12 60	
40866—Car repairs, March, 1913	6 58	
41764—Car service balance, June, 1913	10 35	
42266—Car repairs, bill No. 602	58	
42855—Car service balance, July, 1913	1 35	
43203—Car repairs, bill No. 541	66	
		$67 98

COWAN & CO., GALT, ONT.

39351—Bits for boring machine	$8 80	
40173—Cut-off saws	7 50	
39410—Bits	10 40	
39462—Planer knives	6 48	
41911—Express charges on saws returned for repairs	90	
		$34 08

CANADIAN NORTHERN RAILWAY, TORONTO.

38507—Car repairs, No. 23636	$3 70	
38971— " No. 24486	4 76	
39282—Car service balance, March, 1913	4 55	
40036—Car repairs, account department, No. 25411	45	
41241— " October, 1912, bill No. 26456	5 57	
40738—Car service balance, April, 1913	10 60	
40926—Car repairs, July 19th to September 8th, 1912	6 04	
42009—Car service balance, May, 1913	13 50	
42103—Ticket balance, May, 1913	10 35	
42119—Car repairs, bill No. 27868	2 14	
42121— " bill No. 27869	1 30	
42336— " bill No. 28555	1 20	
		$64 16

CHICAGO & EASTERN ILLINOIS RAILWAY, CHICAGO, ILL.

38257—Car service balance, October, 1912	$3 50	
38437—Car repairs, audit No. 10129	3 41	
38388— " audit No. 13094	1 05	
39402—Car service balance, March, 1913	16 20	
40718— " " April, 1913	14 40	
41569—Car repairs, audit No. 18412	2 05	
41993—Car service balance, May, 1913	16 80	
41748— " " June, 1913	5 85	
42841— " " July, 1913	2 25	
42326—Car repairs, bill No. 19618	1 98	
43263— " June and July, 1913	85	
42940—Car service balance, August, 1913	9 45	
		$77 79

MILTON CARR, SOUTH PORCUPINE, ONT.

38864—Damage to doll carriage, claim No. 6244	$0 65	
41530— " glass and cases, claim No. 5983	12 92	
		$13 57

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA RAILWAY, ST. PAUL, MINN.

37857—Overcharge in rate, silver ore, claim No. 5288	$35 88	
37180—Car service balance, November, 1912	70	
39029—Car repairs, August and September, 1912	4 40	
39139—Car service balance, December, 1912	6 30	
38458—Car repairs, February, 1913	4 30	
40040— " audit No. 115287–116151	19 56	
42125— " bill No. 118303	1 33	
42960—Car service balance, August, 1913	11 25	
43270—Car repairs, bill No. 119904, June and July, 1913	2 31	
		$86 03

CENTRAL RAILROAD CO. OF NEW JERSEY, JERSEY CITY, N.Y.

37158—Car service balance, November, 1912	$6 80	
39031—Car repairs, October, 1912	1 73	
38544—Car service balance, January, 1913	29 25	
39404— " " March, 1913	20 10	
41247—Car repairs, February, 1913, bill No. 27747	1 69	
40720—Car service balance, April, 1913	13 15	
41995— " " May, 1913	14 40	
41752— " " June, 1913	3 95	
42843—Car service balance, July, 1913	21 15	
43267—Car repairs, May, 1913, bill No. 52062	6 98	
42942—Car service balance, August, 1913	26 10	
43258—Car repairs, bill No. 68275	3 38	
		$148 68

COBALT "DAILY NUGGET," COBALT, ONT.

37929—Information Bulletin No. 16	$12 00	
36954—Information Bulletin No. 17, Lists pulpwood buyers and sellers	30 50	
40507—Industrial Bulletins	38 50	
40637—Information Bulletins No. 20 and 21	24 00	
40526—Advertising, Cobalt Station grounds	18 30	
41318—Printing Information Bulletin No. 23	12 00	
41466—Printing Industrial and Information Bulletins No. 24	39 00	
42048—Illustrated write-up in special mining edition	100 00	
42050—Information Bulletin No. 25	12 00	
42553—Cancellation of lease, advertising	6 50	
43064—List No. 3, Names and addresses pulpwood sellers and purchasers	11 75	
		$304 55

CANADIAN RAMAPO IRON WORKS, NIAGARA FALLS, ONT.

37530—Switch stands No. 17 and 18, complete	$552 00	
38232—Switches, frogs, etc.	1,084 60	
41827—Guard rails, switches and frogs	2,901 10	
41882—Spring frogs	1,734 50	
42148—Switch stands	1,570 20	
43144—Frogs	121 00	
		$7,963 40

CHICAGO, ROCK ISLAND & PACIFIC RAILWAY, CHICAGO, ILL.

38509—Car repairs, No. 592178	$0 80	
37010—Repairs to cars, June and August, 1912, reg. No. 611898	5 25	
37160—Car service balance, November, 1912	3 15	
38540— " " January, 1913	7 65	
41245—Car repairs, May to July, 1912, bill No. 432048	3 41	
40722—Car service balance, January, 1913	7 10	
41997— " " May, 1913	20 25	
42127—Car repairs, bill No. 561605	2 88	
43251— " bill No. 581905	5 55	
43458— " bill No. 592882	27 36	
		$83 40

"COURIER" PRINTING CO., ENGLEHART, ONT.

43642—Forms	$7 05	
42144— "	11 65	
		$18 70

THOS CAWLEY, NEW LISKEARD, ONT.

36642—Release and discharge, claims for alleged injuries	$275 00	
		$275 00

"CANADIAN ENGINEER" (BIGGAR, SAMUEL, PUBLISHER), TORONTO, ONT.

37390—Subscription, December, 1912, to December, 1913	$3 00	
40845— " January to December, 1913	3 00	
		$6 00

CHICAGO BINDER & FILE CO., CHICAGO, ILL.

38234—Tariff files and indexes	$54 72	
		$54 72

S. B. CLEMENT, CHIEF ENGINEER AND SUPT. OF MAINTENANCE, NORTH BAY, ONT.

37503—Services rendered Commission, November, 1912	$300 00	
36570— " " December, 1912	300 00	
38665— " " January, 1913	325 00	
38809—Expenses, November and December, 1912	23 25	

S. B. Clement, Chief Engineer and Supt. of Maintenance, North Bay, Ont.—*Continued.*

38943—Expenses, January, 1913	$27 59	
37888—Services rendered Commission, February, 1912	325 00	
37942—Travelling expenses, February, 1913	43 51	
39795—Services rendered Commission, March, 1913	325 00	
39110— " " April, 1913	325 00	
39116—Expenses, March and April, 1913	64 75	
40735—Services rendered Commission, May, 1913	325 00	
41034— " " June, 1913	325 00	
41040—Expenses, June, 1913	24 90	
42157—Services rendered Commission, July, 1913	325 00	
42182— " " August, 1913	325 00	
42280—Expenses, August, 1913	24 40	
43411—Services rendered Commission, September, 1913	325 00	
43370— " " October, 1913	325 00	
		$4,058 40

Central Electric Co., Chicago, Ill.

39760—Electric supplies	$16 04	
		$16 04

Agent at Charlton Station.

36824—Outstanding account, shortage one roll oilcloth, claim No. 5849	$1 46	
		$1 46

W. C. Crawford & Co., Tilbury, Ont.

37699—Sledge and adze handles	$10 10	
		$10 10

Carter's Ink Co., Montreal, Que.

37534—Inks	$64 25	
40747— "	11 00	
41126—Mucilage and ink	31 00	
42243—Mucilage	25 25	
43309—Ink	16 50	
42876—Ribbons	7 45	
		$155 45

C. Cadden, North Bay, Ont.

38945—Expenses, January, 1913	$1 25	
40001— " February, 1913	4 12	
		$5 37

Canadian Allis Chalmers, Ltd., Toronto, Ont.

43392—W. I. equalizer bars, bill No. 2265	$188 00	
43646—Refund 50% demurrage charges, claim No. 7352	150 60	
		$338 60

P. Charbonneau, Englehart, Ont.

40018—Ties	$50 61	
		$50 61

Canadian Inspection & Testing Laboratories, Ltd., Montreal, Que.

38057—Inspection of material for Elk Lake bridge; inspection of tie plates	$14 03	
38741—Inspection, covering wages and expenses of inspector, Montreal River bridge	382 71	
39331—Inspection of material for Elk Lake Br	1 22	
38322—Services *re* Montreal River bridge, Hamilton Bridge contract, February, 1913	130 00	

CANADIAN INSPECTION & TESTING LABORATORIES, LTD., MONTREAL, QUE.—*Continued.*

40131—Inspection of No. 10, N. B. S. hard-drawn copper wire	$7 10	
39626—Services of Inspector Leach on Montreal River bridge....	5 00	
39750—Inspection of spikes	10 30	
40849— " "	5 60	
41590—Inspection of spikes, tie plates, telegraph wire, culvert pipes	81 33	
		$637 29

CANADIAN NORTHERN QUEBEC, TORONTO, ONT.

38259—Car service balance, October, 1912	$0 70	
38395—Ticket balance, October, 1912	4 03	
37162—Car service balance, November, 1912	1 75	
40846—Ticket balance, January, 1913	25	
41999—Car service balance, May, 1913	5 70	
		$12 43

S. J. CHERRY & COMPANY, NORTH BAY, ONT.

36900—Fittings supplied and work for general office	$8 65	
38326—Repairs to water pipes and water tank, general office bldg.	6 42	
40489—Labor and material, August 15th and October 4th, 1912..	5 15	
40635—Comp washers	60	
41594—One radiator, cartage and freight	36 88	
		$57 70

CARIBONUM CO., LTD., TORONTO.

37536—Carbon paper	$9 00	
40129— "	51 00	
41184— "	42 00	
43311— "	30 00	
43640— "	15 00	
		$147 00

CANADIAN TUNGSTEN LAMP CO., HAMILTON, ONT.

38110—Lamps, electric	$17 00	
40135— " "	8 75	
40306— " "	165 00	
43169— " "	99 43	
		$290 18

OLINDO CASTALDE, SUDBURY, ONT.

39705—Loss suit case and contents, claim No. 6478	$73 00	
		$73 00

CANADIAN PNEUMATIC TOOL CO., MONTREAL, QUE.

40133—Breast drills	$135 00	
41284— "	103 50	
42450—Ship auger bits	11 44	
43459—Repairing rivetter	14 45	
41825—Car fittings	12 81	
43760—Repairs to chipping hammers	27 30	
		$304 50

W. H. COE MANUFACTURING CO., PROVIDENCE, R. I.

39864—Aluminum	$66 52	
41118—Ribbon, gold and aluminium	90 87	
		$157 39

CODE & BURRETT, OTTAWA, ONT.

36702—Services rendered *re* application for approval of route map by C. N. Ry., near North Bay, etc.	$15 00	
		$15 00

CLEVELAND COPPER FERRULE CO., CLEVELAND, OHIO.

38683—Ferrules	$61 28	
38818— "	61 28	
41841— "	61 28	
		$183 84

CANADIAN STEEL FOUNDRIES LTD., MONTREAL, QUE.

38061—Steel castings, couplers, springs, freight and express charges	$174 81	
37362—Knuckle joint, B.W.A. and express on box of patterns	1 78	
38699—Castings, springs and boxes	277 11	
37828—Steel castings	235 16	
39723—Couplers, fish plates, etc.	336 46	
39807—Tower couplers, piston valve rings	854 12	
38832—Springs and castings	109 11	
39030—Tower couplers	132 00	
39032—Steel castings	35 64	
39572—Springs	13 45	
40543—T. P. Couplers, freight and cartage	259 97	
40545—Springs	204 50	
40917—Buffer beams, friction plates, bumper blocks	51 05	
40985—Wedges and castings	120 29	
41027—Wedges, blocks and plates	19 77	
40268—Knuckles and couplers	183 02	
40424—Tower locks	1 76	
40426—Link blocks	1 82	
41254—Repairing spring and friction plates	57 33	
41831—Knuckles and springs	366 00	
42239—Wedges	10 34	
42479—Sprockets, dipper teeth, springs, clevises and couplers	420 72	
41880—Frogs	1,470 36	
41932—Steel castings	38 17	
42238—Springs	15 40	
42240—Springs and steel castings	216 45	
42390—Springs, gas pipe	10 00	
43017—Frogs	1,614 00	
43115—Castings	3 15	
43535— "	92 62	
42760—Repairing springs	398 95	
43150—Ditcher	3 08	
43606—Repairing springs	30 85	
43758—Springs	45 45	
		$7,804 69

CENTRAL OF GEORGIA RAILWAY, SAVANNAH, GA.

37166—Car service balance, November, 1912	$4 55	
41573—Car repairs, audit No. 14899-14901	88	
41758—Car service balance, June, 1913	3 60	
42847— " " July, 1913	12 60	
42328—Car repairs, bill No. V 14532	73	
42946—Car service balance, August, 1913	12 60	
		$34 96

CANADA RAILWAY NEWS CO., (F.H. BARKER, AGENT), ENGLEHART, ONT.

37761—Lunches supplied, February 5th, 1912, derailment of engine 115	$13 25	
		$13 25

MUNICIPALITY OF TOWN OF COBALT, COBALT, ONT.

41791a—Loss account damage to crematory blocks, claim No. 6512	$25 00	
42546—Damage to crematory blocks, claim Nos. 7010-7011	28 00	
		$53 00

COBALT BOARD OF TRADE, COBALT, ONT.

40841—Membership fee, December 1, 1912 to November, 30, 1913	$5 00	
		$5 00

FRANK CALVELLO, NORTH BAY, ONT.

37931—Bread supplied auxiliary car, August 30th, May 1st, June 9th, 1912	$7 70	
38003—Bread supplied foreman, Wm. Comrie and C. Ferguson...	3 00	
		$10 70

CANADIAN ASBESTOS CO., MONTREAL, QUE.

39319—Asbestos	$23 62	
38102— "	134 16	
39866— "	37 44	
42475—Magnesia blocks	39 00	
43604— " "	11 61	
		$245 83

CAPITAL PRESS, LTD., OTTAWA, ONT.

39534—Subscription (5 copies) to Railway Commissioners Judgements, year ending March, 31st, 1914	$15 00	
41166—Subscription (4 copies) to Railway Commissioners Judgements, year ending March 31st, 1914	12 00	
		$27 00

THE CROSSEN CAR MANUFACTURING CO., COBOURG, ONT.

39568—Castings	$38 75	
40308—Hand brake appliances	121 50	
42084—Oak moulding	18 30	
43173— "	18 30	
		$196 85

MRS. A. CHARETTE, NORTH BAY, ONT.

38639—Loss of flour, claim No. 6086	$25 00	
		$25 00

CINCINNATI, NEW ORLEANS AND TEXAS PACIFIC RAILWAY, CINCINNATI, OHIO.

38261—Car service balance, October, 1912	$8 05	
37164— " " November, 1912	16 80	
39043—Car repairs, June to September, 1912	78	
39127—Car service balance, December, 1912	8 75	
40125—Car service balance, January and February, 1913	22 95	
40032—Car repairs, bill No. 15774	44	
40934—Car repairs, bill No. 16231	48	
42001—Car service balance, May, 1913	13 50	
41754— " " June, 1913	8 55	
42845— " " July, 1913	30 15	
43205—Car repairs, bill No. 17965	94	
42944—Car service balance, August, 1913	57 15	
		$168 54

AGENT AT COCHRANE STATION, ONT.

37569—Outstanding account, stoves returned for repairs, claim No. 5154	$14 22	
37635—Outstanding account, shortage one case butter, claim No. 6037	1 24	
37869—Outstanding account, O/C in weight and rate, shipment of pipe, claim No. 5410	53 35	
37798—Outstanding account, misdelivery crossarms, claim No. 5857	52 04	
38730—Overcharge car demurrage, claim No. 6531	4 00	
40567—Outstanding account, five cases canned goods short, claim No. 5979	1 47	
40573—Outstanding account, shipment oranges damaged, claim No. 6089	3 75	
40128*a*—Outstanding account, goods short, claim No. 6647	86	
41485— " " shipment billed collect, claim No. 6467	31 96	
41398—Outstanding account, goods short, claim No. 7111	1 76	
41648— " " " " No. 6935	1 31	
		$165 96

CANADA CEMENT CO., LTD., MONTREAL, QUE.

39853—Refund of diversion charge, claim No. 6356	$3 00	
38968—Overcharge in rate, cement, claim No. 5891	178 43	
40316—Cement	287 64	
40978— "	581 46	
42481— "	294 02	
42483— "	1,470 10	
42150— "	294 02	
43025— "	882 06	
42427— "	1,176 08	
43146— "	1,176 08	
43598— "	882 06	
43648— "	1,757 49	
		$8,982 38

CAROLINA, CLENCHFIELD & OHIO RAILWAY, JOHNSON CITY, TENN.

38435—Car repairs, bill No. 3895	$2 55	
38448— " " 4856	0 56	
31554—Car service balance, January, 1913	4 95	
41756— " " June, 1913	8 10	
43257—Car repairs, July, 1913	1 64	
42956—Car service balance, August, 1913	12 25	
43452—Car repairs, bill No. 7403	53	
		$30 58

CANADIAN CONSOLIDATED RUBBER CO., MONTREAL, QUE.

38577—Air hose and fuller balls	$223 89	
37898—Water hose	44 45	
40159— " and steam hose	24 51	
41928—Men's short boots	4 75	
42184—Rubber goods	83 40	
43316—Steam hose	170 67	
		$551 67

CANADIAN RAILWAY & ACCIDENT INSURANCE CO., OTTAWA, ONT.

40775—Renewal premium on E. L. Policy, No. 73568	$7,110 00	
41013—Premium on policy No. 73568, from May 1st, 1913, to April 30th 1914	8,295 70	
		$15,405 70

CARTER DRUG & STATEY CO., COCHRANE, ONT.

38030—Syringe and beef tea for men in wreck, January 3rd, 1912	$4 75	
		$4 75

ALFRED COYELL, TORONTO, ONT.

40217—Preparing and fitting up shelving in Toronto office	$37 65	
		$37 65

THE CARBORUNDUM CO., NIAGARA FALLS, N.Y.

40324—Carborundum wheels	$17 50	
		$17 50

CHICAGO AND ALTON RAILWAY CO., CHICAGO, ILL.

37156—Car service balance, November, 1912	$10 15	
38454—Car repairs, bill No. 148757. Department No. 22386 ...	1 75	
39274—Car service balance, March, 1913	22 05	
41991— " " May, 1913	38 40	
41744— " " June, 1913	4 05	
42316—Car repairs, bill No. 154876	1 30	
42318— " " 154875	3 14	
42320— " " 153789	20 36	
42322— " " 152865	2 15	
43253— " " 155923	9 49	
43260— " " 156938	6 28	
		$119 12

CANADIAN FARM, TORONTO, ONT.

38697—Advertisement	$27 00	
		$27 00

COLORADO & SOUTHERN RAILWAY, DENVER, COL.

38501—Car repairs, bill No. 2157	$5 52	
38737— " audit No. 6853-7957	18 71	
40930— " " 6520	1 39	
		$25 62

CANEDY-OTTO MANUFACTURING CO., CHICAGO HEIGHTS, ILL.

40957—Forge parts	$60 00	
		$60 00

CORPORATION OF TOWN OF COCHRANE, COCHRANE, ONT.

37824—Water account, quarter commencing February 1st, 1913	$5 56	
40631— " " May 1st, 1913 ...	5 56	
42551— " " August 1st, 1913..	5 56	
		$16 68

H. S. CAMPBELL, NORTH BAY, ONT.

40915—Cabinet	$7 50	
		$7 50

COLIN CAMPBELL, THORNLOE, ONT.

40098—Ties	$46 11	
40100—Switch sets	67 19	
40418—Ties	7 74	
		$121 04

WILFRED CADIEUX, MONTREAL, QUE.

43171—Climbers . .	$13 00	$13 00

CANADA LANDS IMPROVEMENT CO., COCHRANE, ONT.

38685—Siding rebate, February, 1911, to August, 1912, Incl. claim No. 6331 . .	$130 00	$130 00

CANADA INGOT IRON CULVERT CO., GUELPH, ONT.

38268—Culvert pipe	$486 00	
40161— "	1,023 08	
		$1,509 08

COBALT LAKE MINING CO., LTD., COBALT, ONT.

38561—Amount of award *re* Cobalt Lake Mining arbitration ..	$5,000 00	$5,000 00

COLORADO, MIDLAND RAILWAY, DENVER, COL.

42131—Car repairs, bill No. 2225	$3 22	$3 22

CAMPBELL & DEYELL, LIMITED, COBALT, ONT.

40565—Siding rebate, Jan. 1st to May 30th, 1912, claim No. 6246..	$114 00	$114 00

COMMERCIAL PRESS, LTD., TORONTO.

36896—One subscription to the Railway Journal, December, 1912, to December, 1913	$1 00	
39476—Five subscriptions to the Railway Journal, December, 1912, to December, 1913	5 00	
40677—Subscription to the Railway Journal, November, 1911, to December, 1913	2 00	
41624—Subscription to the *Railway Journal*, Dec., 1912, to Dec., 1913	1 00	
		$9 00

COPP CLARK CO., LTD., TORONTO, ONT.

37532—Diary . .	$1 25	$1 25

ROLLA L. CRAIN CO., LTD., OTTAWA, ONT.

39762—Binders . .	$4 00	
42421—Forms . .	63 75	
		$67 75

COCHRANE HARDWARE CO., LTD., NORTH BAY.

37859—Cost of stove broken at North Bay shed, claim No. 6022	$5 25
38069——Hardware supplies	191 68
37518— " "	140 48
38733— " "	190 20
39491—Fire clay, fire brick	14 68
38112—Locks, hinges, chain tongs, etc.	28 10
38276—Locks, hinges and hooks	38 88
38384—Building paper	170 90
40341—Hardware supplies	391 07
39566— " "	27 19
39628— " "	51 55

COCHRANE HARDWARE CO., LTD., NORTH BAY,—*Continued.*

39688—Lumber crayons	$2 00	
39754—Tools, metal polish and crayons	35 92	
39756—Snow shoes	26 50	
39920—Paroid roofing, screws, scythes, stones and augers	18 94	
41021—Hardware supplies	47 29	
41023—Mail bags	6 67	
41025—Hardware supplies	119 88	
40322—Dynamite, fuse and detonators, wire, etc.	446 10	
40530—Plumb bobs, yale keys	2 83	
41114—Auger bits, building paper, etc.	48 01	
41116—Gate hinges	22 98	
41252—Can opener and pail, hay fork	75	
41290—Canoes, paint, water cans, etc.	123 66	
41813—Bits, lights of glass	2 55	
41905—Wrenches	9 90	
42419—Moulding hooks, glass, building paper	29 65	
42878—White muresco paint	3 25	
42473—Hoe, fuse, glass and steel	28 09	
41924—Mail bag, wire nails	67 05	
42086—Wood blocks	2 20	
42154—Auger bits and taper files	90	
42234—Tarred felt, hardware, etc.	35 18	
42392— " building paper, etc.	156 76	
43163— " tin caps	116 45	
43165—Steel cable, fire brick, brass butts, butcher knife	29 25	
43377—Ingot iron pipe	45 14	
43425—Closet pail	1 25	
43457—Dynamite, glass heater, bolt and locks, nails	233 10	
42878—White muresco, paint	3 25	
43312—Locks, stove bolts, rope, etc.	11 21	
43390—No. 54 rule	40	
43600—Rivets, washers, locks, hinges, etc.	27 23	
43700—Fire brick, Stillson wrenches, stove pipe, tar felt	332 77	
43764—Set test cards	27 44	
		$3,317 28

CANADA WIRE & CABLE CO., TORONTO, ONT

42415—Bare copper wire	$736 56	
		$736 56

CHICAGO, ROCK ISLAND & GULF RAILWAY, FT. WORTH, TEXAS.

42061—Car service balance, May, 1913	$2 35	
42839— " " July, 1913	5 40	
42938— " " September, 1913	3 40	
		$11 15

CANADIAN PUBLIC HEALTH ASSOCIATION, TORONTO, ONT.

36700—Subscription, year 1913	$2 00	
		$2 00

THOS. COOK & SON, NEW YORK, N.Y.

38745—Commission on tickets sold, July to November, 1912	$8 24	
		$8 24

CENTRAL NEW ENGLAND RAILWAY, NEW HAVEN, CONN.

38456—Repairs to cars	$0 78	
38564—Car service balance, January, 1913	2 70	
40034—Car repairs, bill No. 3324	1 52	
40742—Car service balance, April, 1913	1 80	
41772— " " June, 1913	90	
43199—Repairs to cars, bill 8757	7 52	
		$15 22

CASTINGS OF OTTAWA, LTD., OTTAWA. ONT.

43027—Castings	$179 04	
		$179 04

CENTRAL WEST VIRGINIA & SOUTHERN R. R., PHILADELPHIA, PA.

41776—Car service, June, 1913	$4 95	
		$4 95

CHICAGO JUNCTION RAILWAY, CHICAGO.

38503—Car repairs, bill No. 9833	$2 75	
39039— " bill No. 12833	3 59	
		$6 34

JOHN CLARK, ENGLEHART, ONT.

37933—Supplies furnished auxiliary car, October, 1912	$9 99	
39745— " " " February, 1913	21 57	
40491— " " " March, 1913	11 25	
40098—Ties	18 30	
40418— "	41 66	
40582—Supplies furnished auxiliary car, April, 1913	19 89	
41427—Refund account, Englehart fire sufferer	65 71	
41392— " 50% freight account, Englehart fire sufferer, claim No. 7041	108 00	
41534—Refund account, bona-fide fire sufferer, Englehart fire, claim No. 7156	24 00	
41536—Refund account, bona-fide fire sufferer, Englehart fire, claim No. 7154	27 22	
41554—Refund account, bona-fide fire sufferer, Englehart fire, claim No. 7157	17 20	
41556—Refund account, bona-fide fire sufferer, Englehart fire, claim No. 7155	4 00	
42609—Supplies furnished auxiliary cars, August, 1913	5 10	
42620—Refund of 50% freight account, bona-fide fire sufferer, eleven claims	113 04	
42620—Refund of 50% freight account, bona-fide fire sufferer, claim No. 7422	11 70	
42622—Refund of 50% freight account, bona-fide fire sufferer, claim No. 7423	1 69	
42624—Refund of 50% freight account, bona-fide fire sufferer, four claims	35 03	
42840—Supplies furnished auxiliary car, October 2, 1913	16 59	
43240*a*—Ties	13 78	
		$565 72

EDWARD COOK, THORNLOE, ONT.

37126—Telegraph poles	$401 95	
39461— "	129 50	
39461—Loading poles	5 55	
40020— "	234 37	
40100— "	78 13	
41971— "	6 50	
41971— "	60 00	
42000—Telegraph poles	183 29	
42000— "	179 00	
43103*a*— "	166 40	
43103*a*— "	114 00	
43240*a*— "	10 00	
		$1,568 69

CANADIAN DETROIT LUBRICATOR CO., WINDSOR. ONT.

37510—No. 1 Imp. air brake lubricator	$13 50	
40083—Repair pairs for lubricators	115 20	
40264—Lubricators	10 32	
		$139 02

CHICAGO TERRE HAUTE & S. E. RAILWAY, CHICAGO, ILL.

37186—Car service balance, November, 1912	$4 90	
39147— " " December, 1912	8 40	
41123—Car repairs, January, 1913, bill No. 8637	1 33	
40744—Car service balance, April, 1913	6 30	
42015— " " May, 1913	45	
41774— " " June, 1913	5 40	
42861— " " July, 1913	9 40	
		$36 18

CHARLTON AGRICULTURAL SOCIETY, CHARLTON, ONT.

39547—Donation—prizes—fair, 1913	$10 00	
40292— " towards building dining hall	10 00	
		$20 00

CURTAIN SUPPLY CO., CHICAGO, ILL.

41256—Curtains	$140 30	
		$140 30

"THE CANADIAN COURIER."

42006—Advertising	$21 84	
		$21 84

CHAS. CHAPMAN, LONDON, ONT.

38264—Forms	$83 41	
40079—Memo forms	122 34	
39690—Forms	29 40	
40745—Books	61 17	
42171—Forms	17 75	
42417— "	59 02	
42146— "	55 50	
43313— "	31 12	
42874— "	100 32	
		$560 03

CENTRAL FREIGHT ASSOCIATION, CHICAGO, ILL.

38423—Expenses *re* tariff supplies, November, 1912, bill No. 5216	$0 78	
38330—Cost of tariffs supplied, etc., month of February, 1913	53	
39532— " " " May, 1913	27	
40641—Copy of tariff list, No. 8 C, May, 1913	35	
40536—Cost of tariffs supplied, May 31, 1913	53	
41682—Cost of tariffs supplied, July 31st, 1913	74	
		$3 20

CRUCIBLE STEEL CO. OF AMERICA, PITTSBURG.

38122—Steel	$30 80	
40171— "	41 80	
40533— "	50 60	
39412— "	15 68	
		$138 88

LESLIE S. CLARKE, ENGINEERING DEPT., NORTH BAY, ONT.

37713—Expense account, October, 1912	$13 58	
39995— " February, 1913	5 00	
		$18 58

NORMAN CHILD, MATHESON, ONT.

36898—Rent of stove and tent	$10 00	
		$10 00

CANADIAN OIL COMPANIES, LTD., TORONTO.

38059—Car, engine and valve oils	$379 39	
42241—Car and engine oil	178 72	
		$558 11

CENTRAL RAILWAY SIGNAL CO., PITTSBURG, PA.

39758—Fusees and torpedoes	$83 00	
41837—Fuses	63 00	
42236—Non-flying torpedoes	30 00	
43314—Torpedoes	40 00	
		$216 00

COCHRANE TELEPHONE CO., LTD., COCHRANE, ONT.

40362—Telephone exchange service, Dec. 8th to June 8th, 1913	$15 00	
40982— " " June 8th to Dec. 8th, 1913	15 00	
		$30 00

A. W. CAVANAGH, TIE INSPECTOR, NORTH BAY, ONT.

37711—Travelling expenses, October, 1912	$28 95	
37719— " " November, 1912	9 15	
36858— " " December, 1912	23 10	
38815— " " January, 1913	26 60	
37964— " " February, 1913	25 40	
39999— " " March, 1913	19 30	
39814— " " April, 1913	28 10	
40212— " " May, 1913	20 35	
41316— " " June, 1913	20 90	
42373— " " July, 1913	27 50	
42707— " " August, 1913	24 65	
43574— " " September, 1913	19 40	
		$273 40

CANADIAN CAR & FOUNDRY CO., MONTREAL, QUE.

37663—Caboose cars, Nos. 70, 71, 72, 73, and freight charges	$7,947 36	
38051—Freight on air brake material car, No. 551271	2 77	
37538—Car parts and locks	47 85	
39317—Castings	8 75	
39335—Wedges	37 50	
38118—Brake beams	54 00	
38224—Repair parts	16 25	
40337— "	86 52	
39564— "	54 25	
39924—M. i. levers	6 25	
39974—Striking plates	7 80	
40959—M. i. carriages	4 50	
40961—Car parts	25 00	
41035—Brake beams, truck bolsters	775 76	
40302—M. i. columns	45 00	
41132—Top casings	30 00	
42245—Columns	65 00	
41498—Repairing parlor cafe cars, special work on cars "Sesekinika," "Tetapaga," "Wasaksima"	2,309 71	
41926—Sill brackets	17 50	
42186—Car parts	65 00	
43161—Brake heads	14 00	
43698—Journal box lids, bills No. D20016, D20100	12 50	
		$11,633 27

CENTRAL PRISON INDUSTRIES, TORONTO, ONT.

38065—Brooms	$24 00	
37528— "	40 00	
39311— "	40 00	
38098— "	40 00	

CENTRAL PRISON INDUSTRIES, TORONTO, ONT.—*Continued.*

38216—Brooms	$40 00	
39972— "	40 00	
40318— "	40 00	
41835— "	40 00	
43541— "	24 00	
42768— "	12 00	
		$340 00

JOS. CHAUMONT, EARLTON, ONT.

38163—Ties	$57 48	
		$57 48

CONSOLIDATED OPTICAL CO., LTD., TORONTO, ONT.

38975—Repairing anemometer and glass prismatic compass	$3 75	
42764—Set test cards	58	
43142—Williams' lantern oil attachment	38 75	
		$43 08

CANADIAN YALE AND TOWNE CO., LTD., ST. CATHARINES, ONT.

37526—Padlocks	$44 14	
38705—Checks	30 00	
39493—Discount deducted from invoice, November 20th, 1912	0 90	
38220—Padlocks	58 55	
39926— "	18 01	
40753— "	33 36	
40314— "	18 01	
		$202 97

CORNWALL AND LEBANON RAILWAY, LEBANON, PA.

37188—Car service, balance, November, 1912	$7 35	
39149— " " December, 1912	3 85	
		$11 20

CONROY AND LAING, NORTH BAY, ONT.

38077—Springs and mattresses	$23 00	
38108—Blankets	53 16	
40163—Blankets, mattresses and pillows	24 68	
		$100 84

W. B. CROMBIE, TIE INSPECTOR, IROQUOIS FALLS, ONT.

37717—Travelling expenses, November, 1912	$2 35	
36856— " December, 1912	1 25	
38813— " January, 1913	12 50	
37966— " February, 1913	8 25	
39993— " March, 1913	8 30	
39136— " April, 1913	11 45	
		$44 10

CARBOLINEUM WOOD PRESERVING CO., NEW YORK, N.Y.

38063—Avenarius carbolineum	$14 40	
		$14 40

CLAPP FIRE RESISTING PAINT CO., BRIDGEPORT, CON.

38067—Paint	$127 20	
		$127 20

CANADIAN CARBON CO., LTD., TORONTO.

38124—Dry batteries	$21 25	
40955—No. 6 batteries	21 25	
		$42 50

CENTRAL FRUIT DESPATCH, CHICAGO, ILL.

42863—Car service, balance, July, 1913	$1 54	
		$1 54

A. COOK, THORNLOE, ONT.

38163—Telegraph poles	$23 00	
		$23 00

CHURCH LIFE, LIMITED, TORONTO, ONT.

37661—¼ page advertisement in Church Life, "The Cathedral Edition"	$37 50	
		$37 50

ROBERT H. CAMPBELL, KEENE, ONT.

38043—Wild rice seed	$10 00	
		$10 00

CURTISS AND HARVEY (CANADA), LTD., COBALT, ONT.

36666—Refund of 15% allowance on explosives, claim 6122	$1 22	
39653—Refund of excess charges, claim No. 6431	6 90	
38918—Overcharge in weight on explosives, claim No. 6338	11 50	
38920—Overcharge in weight on explosives, claim No. 6428	11 32	
38922—Overcharge in rate on explosives, claim No. 6430	7 70	
41384—Claims as per statement, Dec., 1912, to April, 1913	79 63	
41558—Overcharge in rate, explosives, Feb. 14th, claim No. 6960	6 80	
		$125 07

COHEN BROS., COBALT, ONT.

37607—Overcharge in rate, shipment bananas, claim No. 5756	$13 65	
36782—Shortage, one case eggs and ft. charges, claim No. 5828	7 07	
39555—Damage to flour by wet, claim No. 5660	27 35	
39557—Overcharge in weight, potatoes, claim No. 5424	19 42	
39631—Overcharge in weight, vegetables, claim No. 6223	20 40	
38728—Shortage, one bag oats, claim No. 5943	1 62	
38962—Loss 10 bags feed, wheat account, shortage in transit, claim, No. 6433	14 00	
		$103 51

CITY OF COBALT MINING COMPANY, COBALT.

37855—Overcharge in rate, silver ore, claim No. 5742	$25 84	
		$25 84

CANUCK SUPPLY COMPANY, LTD., MONTREAL, QUE.

38047—Redio cloths	$18 00	
		$18 00

B. S. CROMBIE, ENGINEERING DEPT., NORTH BAY, ONT.

37352—Travelling expenses, December, 1912	$3 50	
38811—Travelling expenses, January, 1913	5 00	
37962—Travelling expenses, February, 1913	1 60	
39991—Travelling expenses, March, 1913	2 20	
		$12 30

CAPLING AND HICKLING, NEW LISKEARD, ONT.

37702—Loss one pair rubbers, claim No. 5903	$2 50	
39180—Shortage three pairs pants, claim No. 6568	3 00	
		$5 50

J. Campeau, Gold Land, Ont.

39589—Ties	$242 88	
		$242 88

Cumberland and Pennsylvania Ry., Baltimore, Md.

38566—Car service, balance, January, 1913	$2 70	
39284—Car service, balance, March, 1913	2 25	
		$4 95

Cosgrave Brewery Company of Toronto, Ltd., Toronto.

37728—Loss 7 cases ale, pilfered, claim No. 6056	$16 80	
		$16 80

Cochrane Steam Laundry, Cochrane, Ont.

38915—Washing five pairs blankets	$2 00	
41535—Laundry work, May and June, 1913, Timmins and Cochrane bunkrooms	11 80	
41678—Laundry work, July and August, 1913, Timmins and Cochrane bunkrooms	10 85	
42763—Laundry work performed for bunkrooms, August	18 22	
42842—Laundry work performed September, 1913, Timmins, Cochrane, Englehart	14 06	
		$56 93

Canadian Gazetteer Publishing Co., Toronto, Ont.

39753—One copy of Ontario Business Directory	$10 00	
		$10 00

P. Critchley, Monteith P.O.

40465—Ties	$405 30	
		$405 30

W. S. Carter, Cochrane, Ont.

38868—Cost repairs to furnace damaged in transit, claim No. 6241	$5 00	
		$5 00

The "Civilian," Ottawa, Ont.

39078—Advertisement, story of civil service, in the "Civilian"	$25 00	
		$25 00

E. Cole Master Mechanic's Dept., North Bay, Ont.

39134—Travelling expenses, April, 1913	$2 50	
		$2 50

Geo. Chamandy, Cobalt, Ont.

39184—Loss, shortage one case shoes, claim No. 5939	$108 00	
		$108 00

Samuel W. Cohen, Cobalt, Ont.

31904—For services and expenses in connection with Cobalt Lake arbitration suit	$537 00	
		$537 00

Columbia Phonograph Co., Toronto.

39118—Dictaphones	$572 69	
43429—Repair parts	0 70	
42872—Repair parts	3 20	
		$576 59

COHEN BROS., COBALT, ONT.

39182—Overcharge in weight, apples, claim No. 6262	$9 80	
41343—Loss one bag oat chop, shortage, claim No. 6209	1 60	
41394—Shortage oat chop and shorts, claim No. 6271	16 77	
		$28 17

A. J. CLARK, TORONTO, ONT.

40481—Two bronze plaques for car "Sir James"	$275 00	
		$275 00

E. CRAIG, ELK LAKE, ONT.

40020—Ties	$355 43	
		$355 43

C. M. COSTER, NEW LISKEARD, ONT.

40158—Damage to box H. H. goods, claim No. 6264	$5 00	
		$5 00

HERMAN H. COOK, THORNLOE, ONT.

40236—For N. ½ lot 8, con. 5, Cane, 1.9 acres	$40 00	
		$40 00

CARLTON SUPPLY COMPANY, BROOKLYN, N.Y.

39928—Black print paper	$5 40	
		$5 40

COBALT TOWNSITE MINING COMPANY, COBALT, ONT.

40128—Overcharge in weight and rate, silver ore, claim No. 6837	$8 30	
41425—Overcharge in weight and rate, silver ore, claim No. 6470.	39 39	
42516—Overcharge in weight and rate, silver ore, claim No. 7152	34 75	
		$82 44

C. CORNELL, GOLDLAND P.O.

41293—Ties	$56 70	
		$56 70

I. CORNEAU, COCHRANE, ONT.

40418—Ties	$53 42	
41511—Ties	17 80	
		$71 22

J. E. CHEVIER, CORNWALL, ONT.

40615—For N. ½ Lot 6, Con. 6, Barber, 6 acres	$60 00	
		$60 00

R. CARRUTHERS, THORNLOE, ONT.

41511—Ties	$41 78	
41511—Switch sets	134 41	
41971— "	44 80	
42000—Ties	13 93	
		$234 92

CAMPBELL & MCDIARMID, NORTH BAY, ONT.

41168—Repairing and renewing flag, May 23rd, 1913	$5 00	
		$5 00

COBALT PUBLIC SCHOOLS, COBALT, ONT.

41528—Overcharge in rate, coal, claim No. 6589	$38 05	
		$38 05

H. CARTWRIGHT, CHARLTON, ONT.

40016—Ties	$114 30	
		$114 30

E. CASSARD, COCHRANE, ONT.

41376—Donation, horse alleged killed, M.P. 250½, June 22nd, 1913	$20 00	
		$20 00

CATTARELLO BROS., COBALT, ONT.

41388—Loss account, damage to macaroni, claim No. 6584	$2 30	
		$2 30

LOUIS LES COULES, COCHRANE, ONT.

41532—Damage to household goods	$8 00	
		$8 00

H. CAMPBELL, NEW LISKEARD, ONT.

41341—Damage to household goods in transit, claim No. 6530	$10 00	
		$10 00

JOHN CATTO & SON, TORONTO, ONT.

41110—Table cover	$7 00	
		$7 00

THE CHARLTON ENGLEHART ELECTRIC LIGHT & POWER CO., CHARLTON, ONT.

41839—Electric current, Englehart shops, April, 1913	$57 12	
42765— " " supplied, Charlton station, July and August, 1913	90	
43066—Electric current supplied Charlton station, month of September, 1913	1 85	
		$59 87

CANADIAN SHOVEL & TOOL CO., HAMILTON, ONT.

37763—Shovels	$37 04	
39279— " (snow)	70 56	
40127— "	40 20	
39574—Track shovels	155 04	
40793— " "	18 99	
41513— " "	75 97	
41120— " " and scoops	112 01	
41829— " "	56 98	
42295— " "	151 94	
41884— " "	37 98	
43123— " "	37 98	
		$794 69

I. CAPLAN, NORTH BAY, ONT.

42545—Loss overalls account, damage by acid in North Bay freight shed, claim No. 7187	$18 88	
		$18 88

O. Chartrund, Cobalt, Ont.

42492—Donation *re* alleged killing of cow, Cobalt, Sept. 17th, 1913	$15 00	
		$15 00

G. H. Clemes, Cochrane, Ont.

42520*a*—Loss, three bottles whiskey, broken in transit, claim No. 6600	$2 34	
42522*a*—Shortage one case liquor in transit and freight claim No. 6599	12 87	
		$15 21

H. Collect, Englehart, Ont.

42647—Damage to household goods with connections, claim No. 7085	$9 00	
		$9 00

Cockshutt Plow Co., Ltd., Brantford, Ont.

42518—Damage to wheel barrows in transit, claim No. 6815	$1 50	
		$1 50

Canadian Independent Telephone Co., Toronto, Ont.

43638—Phone material	$3 51	
		$3 51

Delaware, Lackawanna & Western Railroad, New York, N.Y.

38283—Car service balance, October, 1912	$57 05	
38443—Car repairs, audit No. 208961	44	
37192—Car service balance, November, 1912	60 55	
39153—Car service balance, December, 1912	80 15	
38468—Car repairs, audit, Nos. 214593 and 214594	13 45	
38570—Car service balance, January, 1913	86 40	
40427—Car repairs, bill No. 212612	12 80	
39292—Car service balance, February and March, 1913	231 15	
40050—Car repairs, audit, Nos. 216441, 217956, 217962	10 94	
40748—Car service balance, April, 1913	61 20	
40868—Car repairs bill, No. 219840	9 82	
41585—Car repairs audit, No. 28546	3 18	
42019—Car service balance, May, 1913	20 25	
41780—Car service balance, June, 1913	46 35	
42270—Car repairs bill, No. 223435	2 10	
42867—Car service balance, July, 1913	32 85	
42966—Car service balance, August, 1913	18 90	
43274—Car repairs bill, No. 228821	8 80	
43396—Coal H. V. 30745, B.R.P. 5005, G.T. 6098	490 77	
		$1,247 15

Delaware & Hudson Company, New York, N.Y.

37190—Car service balance, November, 1912	$45 15	
37436—Car repairs, September and October, 1912	5 13	
39045—Car repairs, October, 1912	4 16	
39151—Car service balance, December, 1912	49 70	
38466—Car repairs bill, No. 23651	2 37	
38568—Car service balance, January, 1913	7 65	
38874—Overcharge advances, car coal, D. & H., No. A 391971, claim No. 6459	2 86	
39290—Car service balance, March, 1913	78 75	
40048—Car repairs bill, No. 24357	5 85	
41253—Car repairs bill, No. 24701	1 94	
40746—Car service balance, April, 1913	21 60	
40936—Car repairs, April 10th and 15th, 1913	98	

DELAWARE & HUDSON COMPANY, NEW YORK, N.Y.—*Continued.*

41589—Car repairs audit, No. 25463	$1 63	
42017—Car service balance, May, 1913	31 05	
42865—Car service balance, July, 1913	31 05	
42964—Car service balance, August, 1913	41 85	
43272—Car repairs bill, No. 26615	1 98	
		$333 70

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N.J.

39361—Graphite	$6 80	
41262—Flake graphite	6 80	
		$13 60

THE DUNER COMPANY, CHICAGO, ILL.

43714—Repair parts for cars	$5 36	
		$5 36

DRUMMOND MINES, LTD., MONTREAL, QUE.

39188—Claim loss, tile, damaged with connections, claim No. 6265.	$2 76	
40364—Rental of ground, Kerr Lake Station, six months to June 30, 1913	6 00	
		$8 76

B. W. DUNNETT & CO., OTTAWA, ONT.

39655—Overcharge in rate, oats, claim No. 6140	$8 80	
39657—Overcharge in rate, oats, claim No. 6307	45 00	
		$53 80

W. H. DODDS, PORCUPINE, ONT.

39685—Special constable services, rendered at camp, No. 6 Porcupine, April 21, 22, 1911	$12 00	
		$12 00

J. Z. DESROCHERS, HAILEYBURY, ONT.

41345—Loss account, glass broken and freight charges, claim 6813	$4 06	
		$4 06

DAVIS & DUNN, LTD., SOUTH PORCUPINE.

39659—Refund car demurrage claim, No. 6191	$38 00	
40569—Loss fish and freight charges, claim No. 6426	4 28	
41347—Loss one shirt, claim, No. 6821	1 50	
42528—Loss vinegar account, damage by frost	3 00	
		$46 78

DIXON BROS., HAMILTON, ONT.

40571—Loss, oranges damaged in transit, No. 6089	$17 50	
		$17 50

CHAS. A. DUFF, RENFREW, ONT.

41429—Refund of 25% demurrage over-assessed, claim No. 6993	$40 50	
41538—Refund of freight and demurrage, billed wrong, claim 7169	46 50	
		$87 00

J. DRINKWATER, SUPERVISOR, NORTH BAY, ONT.

38717—Travelling expenses, November, 1912	$22 00	
37897—Hauling manure from camp and loading on flat cars	16 00	
36862—Travelling expenses, December, 1912	12 90	
39011—Travelling expenses, January, 1913	12 75	
37968—Expense account, February, 1913	9 00	

J. Drinkwater, Supervisor, North Bay, Ont.—*Continued.*

40049—Expense account, March, 1913	$8 15	
39818—Travelling expenses, April, 1913	4 75	
41083— " " May, 1913	6 10	
41228— " " June, 1913	7 40	
42377— " " July, 1913	7 00	
42282— " " August, 1913	8 00	
43593— " " September, 1913	4 95	
		$119 00

Detroit & Toledo Shore Line, Detroit, Mich.

37438—Car repairs, bill, No. 11/259/12	$1 98	
		$1 98

John H. Dunlop, Toronto, Ont.

38707—Spray of flowers	$15 00	
42008—Spray of flowers	10 45	
		$25 45

R. Deadman, Master Mechanic's Dept., North Bay, Ont.

37821—Travelling expenses, month of November, 1912	$1 35	
		$1 35

The Dominion Express Co., Toronto, Ont.

41470—Proportion of telephone rental, Porcupine Station, 1913	$20 00	
		$20 00

Denver & Rio Grande Railroad, Denver, Col.

37020—Car repairs, July and September, 1912, audit No. 3870	$1 55	
37194—Car service balance, November, 1912	10 85	
39155— " " December, 1912	6 60	
38574— " " January, 1913	2 40	
39296— " " March, 1913	7 65	
40430—Car repairs, Oct. 11th, 1912, to Jan. 21st, 1913	18 91	
40752—Car service balance, April, 1913	18 90	
41587—Car repairs audit, No. 10637	2 24	
42338—Car repairs bill, No. 11805	7 26	
		$76 36

Detroit Copper & Brass Rolling Mills, Detroit, Mich.

37902—Copper rods	$21 40	
39839—Brass materials	91 24	
		$112 64

Drummond McCall & Company, Montreal, Que.

37552—Steel tubing, seamless steel	$25 10	
39365—Boiler tubes	2 52	
40183— " "	52 50	
40719— " "	100 00	
43319—Tubes	36 00	
43708—Steel tubing	33 05	
		$249 17

John Douglass, Road Foreman of Engines, North Bay, Ont.

37819—Travelling expenses, November, 1912	$19 00	
36860— " " December, 1912	25 00	
38947— " " January, 1913	21 75	
37970— " " February, 1913	24 00	
40003— " " March, 1913	21 00	
39816— " " April, 1913	15 75	
41081— " " May, 1913	20 50	

JOHN DOUGLAS, ROAD FOREMAN OF ENGINES, NORTH BAY, ONT.—*Continued.*

41230—Travelling expenses, June, 1913	$16 00	
42375— " " July,1913	14 50	
42284— " " August, 1913	22 25	
43591— " " September, 1913	13 50	
		$213 25

THOS. DAVIDSON MANUFACTURING CO., LTD., MONTREAL, QUE.

40755—Stove	$15 40	
40270—Trainman's cook stove	15 09	
42190—Van, stoves	30 18	
		$60 67

DAYTON, LEBANON & CINCINNATI R.R. & TERMINAL CO., DAYTON, OHIO.

42111—Amount remitted in error, per diem, March, 1913	$2 25	
		$2 25

W. DAMP, BOILER INSPECTOR, NORTH BAY, ONT.

37823—Travelling expenses, November, 1912	$4 30	
38949— " " January, 1913	1 55	
40047— " " February and March, 1913	2 50	
40813— " " April, 1913	3 05	
41079— " " May, 1913	2 25	
42379— " " June and July, 1913	4 25	
43108— " " August and September, 1913	7 70	
		$25 60

DELAWARE, LACKAWANNA & WESTERN COAL CO., BUFFALO, N.Y.

41041—Coal (stove)	$1,966 42	
40590—Coal (stove)	157 56	
42052—Coal (stove)	708 47	
		$2,832 45

FREDERICK DANE, LAND COMMISSIONER, TORONTO, ONT.

See statement for vouchers, honorarium for year ending October 31st, 1913	$1,000 00	
See statement for vouchers, salary as land commissioner for year ending October 13, 1913	1,750 00	
See statement for vouchers, travelling and other expenses for year ending October 31, 1913	93 84	
		$2,843 84

CHAS. F. DAWSON, LTD., MONTREAL, QUE.

38282—Copy holders	$27 00	
39934— "	27 00	
41186— "	27 00	
		$81 00

DOMINION REFINERS, LTD., NORTH BAY, ONT.

39857—Overcharge in rate, silver ore, claim No. 6310	$24 00	
		$24 00

DUNLOP TIRE & RUBBER GOODS COMPANY, LTD., TORONTO, ONT.

37769—3½ in. rubber suction hose, 1½ in. steam heater hose, 2 in. linen hose	$201 11	
40721—Fire hose	111 00	
41145—Water and tool hose	42 80	
42299—Fire hose	62 98	
43033—Steam hose	145 50	
		$563 39

R. E. Dietz Company, New York, N.Y.

39363—Inspectors' lamps	$2 75	
38288—Inspectors' lamps	6 00	
43400—Trackwalkers' lamps	21 00	
		$29 75

Henry A. Dreer, Philadelphia, Pa.

38290—Flower seeds	$3 67	
40193—Flower seeds	20	
		$3 87

District Poultry Association, Englehart, Ont.

38555—Donation towards prizes, annual fair, February 11th, 1913.	$10 00	
		$10 00

J. M. Deacon, North Bay, Ont.

38007—Searching plan and 26 lots on plan 22, July, 1903	$2 20	
36738—Account registry office for December, searches	1 60	
38573—Assurance fee for right-of-way from lot 6, con. 3, 264 acres	66 00	
38917—Searches as per statement	9 60	
38390—Searches, December, January and February, 1913	11 20	
40283—Searches, Jas. Sinton	11 00	
39538—Account registry office, April, 1913	19 50	
40645—Searches supplied, April 25th and 30th, 1913	90	
40366—Registry fees	6 30	
43068—Search *re* Abitibi Lands	60	
		$128 90

The Delany & Pettit Co., Toronto, Ont.

37686—Flint	$18 33	
39355—Emery cloth	36 91	
40181—Glue	5 25	
39582—Flint paper	11 39	
40464—Glue, flint paper	41 87	
43321—Flint paper	8 04	
		$121 79

Walter R. Duff, Toronto, Ont.

42975—One print of copperplate etching, Toronto University	$15 00	
		$15 00

Mrs. Anna D. Dart, Toronto, Ont.

38798—For balance of payment on lot 39, North Bay	$1,250 12	
38800—For mortgage and discharge claim, London Loan & Saving Co., lot 39, North Bay	549 88	
38840—Bonus paid London Loan & Saving Co. of Canada for release of mortgage on lot 39, North Bay	45 00	
39036—Balance of payment on lot 39, North Bay	12 58	
		$1,857 58

Andrew G. Davie, North Bay, Ont.

39698—Type ribbons	$3 00	
40988—Type ribbons	1 50	
43154—Typewriter ribbon	75	
		$5 25

Detroit, Toledo & Ironton Railway, Detroit, Mich.

38572—Car service balance, January, 1913	$1 80	
39294—Car service balance, March, 1913	59 85	
40592—Car repairs, March 23rd, 28th, 1913	7 56	

DETROIT, TOLEDO & TRENTON RAILWAY, DETROIT, MICH.—*Continued.*

40750—Car service balance, April, 1913	$6 30	
40940—Car repairs, bill No. 225, April, 1913	88	
42400—Car repairs, bill No. 213	36	
43215—Car repairs, bill No. 215	2 41	
		$79 16

DOMINION PAPER BOX CO., TORONTO, ONT.

40191—Boxes 8 in. x 3½ in. x 2 in.	$7 50	
		$7 50

DOMINION LINEN MANUFACTURING CO., PETERBORO, ONT.

38083—Towels	$20 40	
41173—Towels	17 00	
		$37 40

DIAMOND FLINT GLASS CO., MONTREAL, QUE.

38165—Globes	$21 00	
37554—Globes, postals, battery jars	44 80	
39359—Globes	21 60	
40177—Chimneys	27 00	
39766—Globes	10 80	
40466—Glass	24 00	
41913—Chimneys	18 00	
43152—Globes	7 20	
		$174 40

DULUTH, MISSABE AND NORTHERN RY., DULUTH, MINN.

37434—Car repairs, bill No. 35	$4 63	
38441—Car repairs, bill No. 36	2 03	
		$6 66

DES MOINES UNION RAILWAY CO., DES MOINES, IOWA.

43276—Car repairs, bill No. 20611	$0 40	
		$0 40

DOMINION RADIATOR COMPANY, TORONTO, ONT.

38085—Grate bars	$4 65	
38286—Grates	4 23	
43620—Stafford boilers	398 52	
		$407 40

DOMINION ENVELOPE CO., LTD., TORONTO, ONT.

38081—Envelopes	$14 00	
42173— "	25 80	
41938— "	17 00	
42092— "	35 00	
43325— "	36 50	
43650— "	13 20	
		$141 50

D. DUFF, THORNLOE, ONT.

41971—Switch sets	$179 21	
42000—Switch sets	89 60	
42000—Cedar wood	33 60	
		$302 41

MRS. HANNAH DEWAN, NORTH BAY, ONT.

38836—For Lot 72, Worthington St., North Bay	$1,000 00	
		$1,000 00

DULUTH, SOUTH SHORE AND ATLANTIC RY., MARQUETTE, MICH.

38285—Car service balance, October, 1912	$8 50	
37196— " " November, 1912	2 80	
39265— " " December, 1912	50	
38472—Car repairs, bill No. 102230	80	
41255— " March, 1913	12 80	
40938— " Jan. to April, 1913	3 30	
42021—Car service balance, May, 1913	5 40	
42869— " " July, 1913	1 80	
		$35 90

DETROIT AND MACKINAC RAILWAY, DETROIT, MICH.

38287—Car service balance, October, 1912	$3 50	
39157— " " December, 1912	1 40	
37198— " " November, 1912	6 65	
38576— " " January, 1913	6 30	
39442— " " February, 1913	1 35	
40754— " " April, 1913	25 30	
41782— " " June, 1913	5 85	
42871— " " July, 1913	11 40	
42986— " " August, 1913	13 95	
		$75 70

DRESSEL RAILWAY LAMP WORKS, NEW YORK, N.Y.

41919—Lamps	$27 00	
43317—Brackets	6 00	
		$33 00

DESPATCH AND TRIBUNE, NORTH BAY.

37935—Printing notices *re* change of time	$2 50	
38009— " time-tables	2 50	
37556— " specifications	5 00	
38332— " notices *re* change of time	2 50	
40187— " circulars on cotton	18 50	
40851— " warning cards	4 50	
40644—Advertisement, Cobalt Station Grounds	9 60	
41735—Advertisement, unsold lots Latchford Townsite	6 00	
42613—Three insertions covering advertisement *re* obstruction on track mileage	1 50	
42773—Bills covering change of time	2 25	
42987—Bills *re* auction sale in English and Italian	5 50	
43327—Ore forms	3 00	
42880—Advertisement re stenographer	6 50	
		$69 85

HENRY DISSTON & SONS, LTD., TORONTO, ONT.

39367—Hacksaw blades	$7 70	
41917—Swages	4 19	
41936—Hacksaw blades	7 70	
42160—Bandsaw	2 72	
		$22 31

AGENT AT DIVER STATION.

38924—Outstanding account on account of demurrage claim, No. 6549	$2 00	
		$2 00

DOMINION WIRE ROPE CO., MONTREAL, QUE.

38087—Cable, swinging cable	$42 50	
38128—Swinging cable	42 50	
43398—Steam shovel cable	42 50	
		$127 50

DOME MINES, LIMITED. TORONTO, ONT.

37517—Rebate siding agreement, claim No. 5978	$66 00	
37937—Turning down shaft for crank for water pump	1 66	
36668—Siding rebate—Dome siding month of August, 1912	104 00	
36670— " " " September, 1912	126 00	
36672— " " " October, 1912	120 00	
39559— " " " November, 1912	88 00	
39561— " " " December, 1912	162 00	
39563— " " " January, 1913	138 00	
39603— " " " February, 1913	86 00	
39605—Loss ½ gal. Milk of Bismuth, bottle broken in transit, claim No. 6343	3 25	
39186—Siding rebate, Dome siding, month of March, 1913	34 00	
41408—Siding rebate, Dome siding, month of April, 1913	126 00	
41650—Overcharge in rate, machinery, claim No. 6717	6 93	
41652—Siding rebate, June, 1913	56 00	
42971—Siding rebate, May, 1913	134 00	
42524—Overcharge in rate, mining machinery	18 70	
42526—Siding rebate, July, 1913, claim No. 7360	38 00	
42628—Siding rebate month of August, 1913, claim No. 7470	82 00	
42630—Overcharge in rate, mining machinery, claim No. 6715	9 87	
		$1,400 41

G. W. DUNCAN, NORTH BAY, ONT.

38089—Vegetables for Commissary	$84 90	
37546— " "	28 80	
39357— " "	68 45	
38130— " "	167 30	
38284— " "	54 65	
40189— " "	9 10	
39580— " "	55 02	
39696—Eggs for Commissary	7 20	
39768—Butter for Commissary	70 65	
39978—Vegetables for Commissary	40 35	
40717— " "	67 15	
41037— " "	130 75	
41175— " "	138 80	
40332— " "	78 70	
40462— " "	114 66	
40986—Provisions "	45 55	
41264—Vegetables "	48 65	
41921— " "	251 45	
42489—Groceries "	40 00	
41934— " "	162 70	
42246—Vegetables "	28 30	
43035—Provisions "	104 60	
43177— " "	236 70	
43543—Vegetables "	34 90	
43320—Vegetables and Groceries for Commissary	140 43	
43712—Vegetables for Commissary	1 80	
		$2,211 56

DOUGLAS & RATCLIFF, LTD., TORONTO, ONT.

37076—Twine	$3 00	
38579— "	2 67	
37900— "	6 04	
		$11 71

DAVIE BROTHERS, EARLTON, ONT.

37550—Butter and lard	$11 00	
37730—Loss account, damage to 6 bottles of honey, and freight charges, claim No. 5805	1 19	
38865—Meat	8 60	
38126—Hardware supplies	13 60	
39038—Supplies furnished for Gowganda Survey	5 30	
42088—Butter	17 00	
		$56 69

DULUTH, RAINY LAKE & WINNIPEG RY., TORONTO, ONT.

37018—Repairs to cars, September, 1912, Acct. Dep. No. 2056	$1 14	
37440—Repairs to cars, October, 1912, Acct. Dep. No. 2140	60	
		$1 74

DURHAM & SOUTHERN RY., DURHAM, N.C.

37200—Car service balance, November, 1912	$1 75	
39159— " " December, 1912	2 45	
38578— " " January, 1913	1 80	
		$6 00

GORDON DUNCAN, MASTER MECHANIC'S DEPT., NORTH BAY, ONT.

36764—Travelling expenses, December, 1912	$4 95	
		$4 95

T. DELL, McCOOL P.O., ONT.

41293—Ties	$79 10	
40418— "	39 70	
40418— "	39 60	
		$158 40

DULUTH, WINNIPEG & PACIFIC RY., TORONTO.

37202—Car service balance, November, 1912	$2 80	
38470—Car repairs, bill No. 2245	1 82	
43213— " bill No. 3009	8 38	
43269— " June, 1913	30 14	
		$43 14

R. DICK, GOLD LAND, ONT.

40100—Ties	$122 19	
40418—Ties	36 60	
		$158 79

M. DEVANY, CHARLTON, ONT.

36620—Services rendered, 5½ days at $2.50 per day	$13 75	
		$13 75

J. DINSMORE, IROQUOIS FALLS, ONT.

37126—Ties	$165 81	
39463— "	187 68	
37938— "	385 35	
40016— "	244 26	
41293— "	71 73	
		$1,054 83

E. DOMMETT, McCOOL P.O., ONT.

36650—Ties	$201 78	
39589— "	406 02	
		$607 80

JAS. DINSMORE, IROQUOIS FALLS, ONT.

39463—Ties	$72 36	
37938— "	117 87	
		$190 23

DUNLOP & COMPANY, PEMBROKE, ONT.

38091—Iron	$130 99	
37548—Tarred felt and building paper	89 87	
38132—Steel	25 67	
		$246 53

DINGLE & ALGER, NORTH BAY, ONT.

37542—Push Buttons	$0 90	
		$0 90

DAILY & WEEKLY EXPOSITOR, BRANTFORD, ONT
(T. H. Preston's Publication.)

38334—"Want adv." for machinists, inserted six times	$0 60	
		$0 60

J. W. DEEGAN, NORTH BAY, ONT.

40179—Rubber boots	$16 00	
41845—Rubber boots	12 00	
		$28 00

JAS. DOIG & COMPANY, LATCHFORD, ONT.

38872—Loss, eggs broken in transit, claim No. 6339	$0 87	
40643—Supplies furnished, April, 1913, for surveyors	19 75	
		$20 62

L. DAVID, WAH-TAY-BEG, ONT.

40469—Ties	$239 13	
40100*a*—"	79 71	
40418— "	131 28	
		$450 12

MRS. MARTHA JANE DAVIS, TORONTO, ONT.

40833—For right-of-way, Iroquis Falls Branch, 3.4 acres, south ½ lot 10, con. 1, Calvert, covered by certificate of ownership, No. 291	$82 00	
		$82 00

ADAM N. DAVIS, COBALT, ONT.

40136—Refund of demurrage charges, assessed at Cobalt, claim No. 6820	$102 50	
		$102 50

H. J. DE VRIES, CHARLTON, ONT.

40016—Ties	$125 91	
		$125 91

DOMINION SNATH CO., WATERVILLE, QUE.

40921—Snaths	$21 00	
		$21 00

E. DESORMEAUX, NUSHKA, ONT.

41293—Ties	$83 94	
		$83 94

DELRAY CONNECTING RY. CO. DETROIT, MICH.

40425—Repairs to cars, bill No. 119	$0 68	
		$0 68

DOMINION PAINT WORKS, LTD., WALKERVILLE, ONT.

41177—Paints	$330 00	
		$330 00

L. A. Demers, Cochrane, Ont.

41785—Loss account shortage, dresses, clothes and stove board in transit, claim, No. 6204	$22 25	
		$22 25

Eugene Dietzgen Company, Ltd., Toronto, Ont.

38079—Tracing cloth, sheets, No. 360	$50 17	
37544—Higgins' ink	25	
39495—Drawing materials	34 56	
38236—Draughting supplies	20 63	
40185—Tracing cloth and draughting supplies	51 95	
39976—Draughting supplies	24 96	
40715—Drawing supplies	46 13	
41039—No. 3351—D, art gum	76	
41685—Drawing paper	23 75	
41915—Draughting supplies	370 00	
42423—Draughting supplies	76 81	
42090—Pencils	1 54	
43323—Draughting supplies	21 84	
43431—Chainage pins	1 05	
		$724 40

Dominion Register Co., Ltd., Toronto, Ont.

42158—Forms	$45 00	
42882—Forms	87 50	
		$132 50

The Defiance Machine Co., Rochester, N.Y.

43031—Check writing machine	$100 00	
		$100 00

Doucet & Charbonneau, Haileybury, Ont.

42649—Refund of freight charges paid on shipment delayed with C.P.R. and returned to shippers' account, duplicated claim, No. 6833	$0 93	
		$0 93

H. Dix, Cochrane, Ont.

42626—Overcharge in rate, settlers' effects, damage to H. H. goods, claim 6354	$12 98	
		$12 98

Dagenais & Poisson, North Cobalt, Ont.

42714—Loss, rice account, damage to bags in transit, claim No. 6829	$2 09	
		$2 09

G. Dunn, North Bay, Ont.

42902—Refund of deductions made from March and April, 1913, wages *re* claims, Jamieson Meat Co., McLarens, Ltd...	$13 20	
		$13 20

Dominion Glass Company, Ltd., Montreal, Que.

43710—No. 11, postal chimneys	$12 00	
		$12 00

ERIE RAILROAD, NEW YORK, N.Y.

38289—Car service balance, October, 1912	$54 60	
38445—Car repairs, record, No. 764	22 78	
37204—Car service balance, November, 1912	141 40	
37442—Car repairs, September and October, 1912, bill No. 780	10 10	
39161—Car service balance, December, 1912	87 75	
38580—Car service balance, January, 1913	50 70	
39298—Car service balance, March, 1913	37 12	
40054—Car repairs record, Nos. 679, 802, 803	109 57	
40756—Car service balance, April, 1913	76 20	
40870—Car repairs, Dec. 14, 1912, to March 19th, 1913	34 17	
41593—Car repairs, March and April audit, No. 738	5 04	
42023—Car service balance, May, 1913	24 12	
41784—Car service balance, June, 1913	12 60	
42272—Car repairs bill, No. 830	15 36	
42873—Car service balance, July, 1913	57 78	
42970—Car service balance, August, 1913	57 20	
43278—Car repairs bill, No. 703	13 21	
		$809 70

AGENT AT ENGLEHART STATION.

38747—Supplies furnished car "Temagami" by J. Clark	$2 45	
37804—Outstanding account shortage, three cases dry goods, claim No. 6047	8 78	
		$11 23

ELECTRIC RAILWAY JOURNAL, NEW YORK, N.Y.

39868—Subscription to December, 1913	$4 50	
		$4 50

WM. ENGLISH, TIE INSPECTOR, NORTH BAY, ONT.

37721—Travelling expenses, October, 1912	$26 75	
37723— " " November, 1912	24 80	
36690— " " December, 1912	16 35	
38817— " " January, 1913	29 80	
37972— " " February, 1912	19 60	
40005— " " March, 1913	29 25	
39820— " " April, 1913	30 95	
40216— " " May, 1913	19 90	
41320— " " June, 1913	27 65	
42383— " " July, 1913	30 55	
42709— " " August, 1913	28 40	
43576— " " September, 1913	26 15	
		$310 15

E. B. EDDY CO., LTD., HULL, QUE.

38605—Paper	$16 00	
37560—Toilet, wrapping and blotting paper	55 72	
39369—Toilet paper	29 33	
38134—Matches	43 42	
39540—Toilet paper	29 33	
39772—Matches and wrapping paper	17 40	
41179—Toilet paper	19 55	
41042—Paper	30 00	
41923—Toilet paper	29 33	
42491—Toilet paper	29 33	
		$299 41

EDWARDS, MORGAN & CO., TORONTO, ONT.

38709—Services rendered. November 1st, 1911, to October 31st, 1912	$340 87	
		$340 87

ENGLEHART AGRICULTURAL SOCIETY, ENGLEHART, ONT.

39477—Donation to society	$25 00	
41612—Donation towards banquet for members	15 00	
		$40 00

J. L. ENGLEHART, CHAIRMAN, TORONTO, ONT.

See statement for vouchers, honorarium for year ending October 31st, 1913	$2,500 00	
See statement for vouchers, remuneration for year ending October, 31st, 1913	2,500 00	
See statement for vouchers, travelling and other expenses for year ending October 31st, 1913	958 46	
		$5,958 46

A. EDWARDS, SUPERVISOR, NORTH BAY, ONT.

37825—Travelling expenses, November, 1912	$13 60	
36864— " December, 1912	10 65	
39013— " January, 1913	9 75	
37974— " February, 1913	10 55	
40051— " March, 1913	11 80	
39822— " April, 1913	14 65	
41085— " May, 1913	14 85	
41232— " June, 1913	12 35	
42381— " July, 1913	12 20	
42286— " August, 1913	14 15	
43577— " September, 1913	14 05	
		$138 60

O. M. EDWARDS CO., SYRACUSE, N.Y.

41515—Compression rollers	$9 50	
		$9 50

"ENGINEERING & MINING JOURNAL," NEW YORK, N.Y.

38238—Subscription (Arthur A. Cole) from Jan. 1st, 1913, to Dec. 31st, 1913	$6 50	
		$6 50

ECLIPSE MANUFACTURING CO., LTD., OTTAWA, ONT.

37558—Ottawa Files	$9 00	
39700— "	9 00	
		$18 00

EASTERN CANADIAN PASSENGER ASSOCIATION, MONTREAL, QUE.

42775—Books and public notice cards	$4 75	
		$4 75

G. ELIAS & BROTHER, BUFFALO, N.Y.

40334—Pine and oak	$575 06	
42175—G. pine	180 00	
43402—Oak	58 63	
43652—Oak	72 07	
		$885 76

J. C. EAMON, BALLAST PIT FOREMAN, NORTH BAY, ONT.

40648—Expenses, April, 1913	$11 50	
		$11 50

ELGIN, JOLIET & EASTERN RY. CO., CHICAGO, ILL.

38582—Car service balance, January, 1913	$3 20	
39300— " " March, 1913	5 55	
40052—Car repairs, bill No. 12271	8 07	
41259— " bill No. 12058	2 95	
41591— " bill No. 13122, April, 1913	1 95	
41879—Overcharge in rate, mining machinery, claim No. 6738	16 29	
43271—Car repairs, May, 1913, bill No. 14330	1 52	
		$39 53

J. R. EATON & SONS, ORILLIA, ONT.

43433—Maple flooring	$199 50	
		$199 50

J. EYDT, COBALT, ONT.

38867—Work performed as per certificate No. 1, plumbing	$331 00	
38876—Damage to w.c. bowl in transit, claim No. 6300	6 07	
38878—Damage to sinks in transit and freight charges, claim No. 6142	4 10	
37939—Labor repairing valves in tanks at Cobalt station	3 00	
		$344 17

E. EMERY, IROQUOIS FALLS, ONT.

38919—Board C.G. Payne, A. Gauthier and B. Holbrooke	$8 25	
39480—Board C. G. Payne	12 00	
43214—Meals supplied Engineering party	28 00	
		$48 25

THE EVENING TELEGRAM, TORONTO.

40646—Adertisement, Cobalt Station grounds	$26 40	
		$26 40

AGENT AT ELK LAKE, ELK LAKE, ONT.

42989—Amount paid Geo. Robinson and D. G. McKenzie for livery, Aug. 26th, 1913	$11 00	
		$11 00

T. EATON CO., LTD., TORONTO, ONT.

39543—Table	$17 50	
40483—Installing screens	29 85	
42747—Loss, sundries, Earlton fire, claim No. 7383	18 60	
		$65 95

B. F. ELWILL GLUE CO., ROCKPORT, MASS.

40195—Glue	$19 50	
		$19 50

R. E. EDWARDS, ENGLEHART, ONT.

36768—Travelling expenses month of November, 1912	$1 25	
37827—Travelling expenses month of October, 1912	2 65	
		$3 90

EMPLOYERS' LIABILITY ASSURANCE CO., TORONTO, ONT.

40493—Extra premiums	$229 59	
		$229 59

EL PASO & SOUTH WESTERN SYSTEM, NEW YORK, N.Y.

40056—Car repairs, audit Nos. 42727-43594	$1 74	
41257—Car repairs, audit No. 44894, March, 1913	3 89	
		$5 63

TOWN OF ENGLEHART, ENGLEHART, ONT.

39475—Taxes due on lots 135, 136, 139, Englehart townsite.....	$85 26	
39479—Donation to fire brigade	25 00	
40627—For amount of taxes due on lots 48 and 54	73 76	
42702—For amount of lots bought at tax sale October 13, 1913—lots 22, 24, 27, 45, 49, 52, 55, 58	1,423 91	
		$1,607 93

EBERHARD-WOOD MFG. CO., TORONTO, ONT.

36902—Cabinet metal shelving to detail	$36 00	
		$36 00

EDSON MANUFACTURING CO., BOSTON, MASS.

39770—Pump	$48 60	
41925—Diaphraghms	13 50	
		$62 10

EDYE-DE-HURST & SONS, DENNYHURST, VIA DRYDEN, ONT.

40336—Shrubs	$45 75	
		$45 75

GEORGE EARL, ELECTRICIAN, NORTH BAY, ONT.

36766—Expenses, December, 1912	$3 15	
		$3 15

ENERGITE EXPLOSIVES, LTD., MONTREAL, QUE.

39707—Overcharge in weight, claim No. 6400	$3 21	
41654—Refund of 10% freight account, rehaul, February 12th to March 1st, 1913, claim No. 6894	40 51	
42651—Loss, oil account, damage, claim No. 6213	19 15	
		$62 87

BERT. EGGENS, CHARLTON, ONT.

40098—Ties	$82 02	
		$82 02

MRS. H. EDWARDS, NAHMA, ONT.

40368—Meats supplied J. Bellevue and gang	$4 20	
		$4 20

ELLIOTT & RITCHIE, NEW LISKEARD, ONT.

41349—Damage to cabinet and box dry goods in transit, claim No. 6535	$2 00	
		$2 00

"EVENING CITIZEN," OTTAWA, ONT.

41737—Advertising, Cobalt Station grounds	$27 00	
		$27 00

C. L. FERGUSON (PAYMASTER), NORTH BAY, ONT.

37643—Payrolls, month of November, 1912	$90,951 65
36678—Payrolls, month of December, 1912	85,238 91
36704—Disbursements, passenger refund, November, 1912	214 45
38221—Petty cash disbursements, November, 1912	161 26
36958—Disbursements, passenger refunds, December, 1912.....	187 42
38671—Amount paid R. J. Reid for full release for alleged injuries	34 43
38673—Payrolls, month of January, 1913	92,692 95
38749—Disbursements, passenger refunds, January, 1912	477 80

C. L. Ferguson (Paymaster), North Bay,—*Continued.*

38751—Petty cash disbursements, January, 1913	83 23	
38921—Amount paid Dominion Express Co., express on stores account	4 52	
37934—Account letter of credit, Hudson Bay Co., favor of J. G. McMillian	1,250 00	
37940—Payrolls, month of February, 1913	87,919 17	
38034—Disbursements, passenger refunds, February, 1913	181 40	
39593—Letter of credit for J. G. McMillan, March 26, 1913	250 00	
38392—Disbursements, petty cash, February, 1913	84 26	
39793—Payrolls, month of March, 1913	84,307 24	
39955—Disbursements, passenger refunds, March, 1913	197 45	
40227—Disbursements, petty cash, March, 1913	77 22	
39086—Payrolls, month of April, 1913	81,590 76	
39464—Disbursements covering passenger refunds during April, 1913	210 95	
39482—Disbursements covering postage, cartage and Customs, April, 1913	89 91	
39632—Amount paid for express charges for Stores Department	9 88	
39634—Cartage and Dominion Express charges for Stores Department	1 96	
40771—Payrolls, May, 1913	98,088 61	
40370—Disbursements, May, 1913, petty cash	71 15	
40372—Passenger refunds, May, 1913	296 92	
40994—Disbursements, petty cash, June, 1913	93 83	
41032—Payrolls, June, 1913	104,003 10	
41537—Disbursements, June, 1913, account express charges	10 48	
41220—Disbursements, passenger refunds, June, 1913	131 35	
42155—Payrolls, month of July, 1913	112,899 06	
42339—Disbursements, petty cash, July, 1913	90 75	
41596—Passenger refunds, July, 1913	181 15	
42104—Disbursements petty cash, August, 1913	84 03	
42162—Passenger refunds, August, 1913	263 81	
42176—Payrolls, August, 1913	117,018 56	
42695—For amount advanced general agent in settlement of alleged injuries, C. M. Stokes, May 3, 1913	40 60	
43367—Disbursements covering passenger refunds, Sept., 13, 1913	88 05	
43417—Payrolls, September, 1913	116,695 70	
43515—Disbursements, express and cartage, July, August, September and October	7 75	
43517—Disbursements, postage and express charges, Sept., 1913	69 53	
43368—Payrolls, October, 1913	118,419 99	
43430—Disbursements, petty cash, October, 1913	88 68	
43562—Passenger refunds, month of October, 1913	274 33	
		$1,195,134 25

Wm. Ferguson, Heaslip, Ont.

37126—Telegraph poles	81 00	
38565— "	105 80	
		$186 80

J. E. Farrell, North Bay, Ont.

40201—Hot water tank for stores building, North Bay	$24 75	
39936— " Englehart restaurant	28 60	
40650—Plumbing repairs, Englehart Station and bunk house	68 45	
42567—Installing radiator in general office building and covering mains in coalbin and telephone storage rooms	63 00	
		$184 80

Fort Smith & Western R. R., Fort Smith, Ark.

41786—Car service balance, June, 1913	$2 70	
		$2 70

Foley, Welch & Stewart, Cochrane, Ont.

36786—Loss, tea and sugar account, damage and freight charges, claim No. 5380	$9 31	
40338—Amount due on steam coal confiscated and exchanged	39 54	
		$48 85

FLORIDA CENTRAL R. R., THOMASVILLE, GA.

38291—Car service balance, October, 1912	$1 50	
		$1 50

JOHN FORMAN, MONTREAL, QUE.

39774—Shades	$8 90	
		$8 90

DR. A. J. FISHER, LATCHFORD, ONT.

36706—Medical services to N. Miller *re* alleged injury, Sept. 5, 1912	$10 00	
38977—Medical services to E. Dorey *re* alleged injury, Sept. 29, 1912	20 00	
		$30 00

FOREST CITY PAVING CO., LONDON, ONT.

38018—Final estimate building roundhouse and machine shop at Cochrane	$128 55	
40575—Loss and damage to machinery, claim No. 5539	66 00	
		$194 55

M. FLOODY, HAILEYBURY, ONT.

37564—Wood	$7 88	
42094— "	13 00	
		$20 88

S. J. FAUGHT, SUPERVISOR, ENGLEHART, ONT.

37829—Travelling expenses, November, 1912	$7 00	
36868— " December, 1912	6 10	
39015— " January, 1913	6 25	
37976— " February, 1913	6 15	
40053— " March, 1913	5 80	
39824— " April, 1913	6 60	
41093— " May, 1913	7 50	
41234— " June, 1913	8 40	
42385— " July, 1913	14 00	
42288— " August, 1913	9 75	
43595— " September, 1913	10 85	
		$88 40

FROTHINGHAM & WORKMAN, LTD., MONTREAL, QUE.

37364—Lowmoor iron	$12 68	
39281— "	20 51	
39497— "	178 07	
39584— "	78 03	
41147— "	67 57	
41136— "	71 56	
41847— "	32 91	
41886— "	25 47	
42192— "	54 10	
43435— "	49 65	
43322— "	91 56	
43718— "	32	
		$682 43

WALTER FOWKE, CHARLTON, ONT.

39461—Ties	$674 37	
40016— "	1,311 33	
40020— "	91 80	
40020— "	48 81	
40100— "	30 60	
41511—Fence posts	48 94	
41971—Ties	16 31	
42716—Shortage of sugar, with connections, claim No. 7357	4 31	
		$2,226 47

GEO. FORDYCE, WAWBEWAWA, ONT.

39859—Shortage one bag salt, claim No. 6132	$0 35	
		$0 35

EUCLIDE FRECHETTE, NORTH BAY.

38908—Loss, Packsack, check No. 341989	$50 00	
		$50 00

FASHION CLOTHING, COBALT, ONT.

37706—Damage to trunks, claim No. 5919	$2 00	
41410— " claim No. 6991	3 50	
		$5 50

N. M. FRASER, CHARLTON, ONT.

40098—Ties	$166 86	
		$166 86

FROST WIRE FENCE CO., HAMILTON, ONT.

39586—No. 952, woven fence	$500 00	
39938—Fence, gates, etc.	664 13	
40990—Woven fence	627 00	
41927—Telegraph wire, fence, gates and wire	1,954 14	
42493—Fence, gates, staples, No. 6 soft wire	1,296 15	
		$5,041 42

FREIGHT CLAIMS ASSOCIATION, RICHMOND, VA.

40992—Assessment, June 18th, 1913, to May 19th, 1914	$15 00	
		$15 00

C. H. FULLERTON, ENGINEER, NEW LISKEARD, ONT.

36960—Expenses, October and September, 1912, and services rendered Commission, July, September and October, 1912..	$105 30	
41686—Surveys, plans and descriptions, etc., to October, 1913....	177 50	
		$282 80

FORSYTHE BROS. CO., CHICAGO, ILL.

38093—Ratchets	$28 80	
37562— "	28 80	
39040— "	38 40	
40989— "	43 20	
43716—Sash ratchets	43 20	
		$182 40

FEDERAL ENGINEERING & SUPPLIES, LTD., TORONTO.

37566—Lamps, lamp guards	$184 75	
39371—Electric lamps	36 00	
38136—Lamps	73 00	
40197—Carbon lamps	28 00	
41044—Electric lamps	36 00	
		$357 75

L. M. FERGUSON, TELEGRAPH & TELEPHONE DEPT., NORTH BAY.

37831—Travelling expenses, month of November, 1912	$2 50	
38951— " " January, 1913	4 75	
40009— " " March, 1913	7 60	
41091— " " May, 1913	4 65	
41236— " " June, 1913	15 80	
42020— " " July, 1913	37 50	
43110— " " August, 1913	26 05	
43112— " " September, 1913	7 10	
		$105 95

FORT WORTH & DENVER CITY RAILWAY, FORT WORTH, TEX.

37444—Car repairs, audit No. 10798	$2 86	
		$2 86

S. FIERBURGER, NUSHKA, ONT.

40465—Ties	$315 51	
40098— "	88 14	
		$403 65

R. FORDER, DEPT. OF MASTER MECHANIC, NORTH BAY, ONT.

36866—Travelling expenses, December, 1912	$1 75	
41089— " June, 1913	2 05	
		$3 80

R. FINDLAY, SUDBURY, ONT.

36904—Freight on 18 test weights from North Bay to Sudbury	$2 80	
		$2 80

J. FENNESSY, HAILEYBURY, ONT.

37519—Shortage five cases whiskey with connections and one bottle broken in transit	$46 60	
37609—Loss, six flasks whiskey broken in transit with connections, claim No. 5659	1 65	
36784—Loss, gin damage on G. T. R. rails, claim No. 5201	18 23	
39861—One case whiskey short, claim No. 6060	8 82	
39863—One bottle liquor broken in transit, No. 6252	80	
38972—Loss, three bottles of whiskey in transit, claim 6384	2 60	
41881—Loss, three bottles of whiskey and freight charges, claim 6712	2 75	
		$81 45

FLORIDA EAST COAST RAILWAY, ST. AUGUSTINE, FLA.

38474—Car repairs	$1 31	
		$1 31

W. H. FOSTER, THORNLOE, ONT.

36650—Switch sets	$47 75	
42000—Telegraph poles	22 60	
42000— "	20 00	
43103*a*— "	7 00	
		$97 35

T. FAULKNER, GOLD LAND, ONT.

39461—Ties	$62 73	
39463— "	142 38	
39084—Donation *re* sow alleged killed, May 10, 1913, MP 222	10 00	
41293—Ties	143 85	
		$358 96

C. FERGUSON, NORTH BAY, ONT.

40199—Butter and potatoes supplied	$3 31	
		$3 31

A. FELDMAN, KRUGERSDORF, ONT.

37551—Donation *re* cow alleged killed, October 12th, 1912	$25 00	
		$25 00

W. Flood, McCool, P.O., Ont.

37941—Eggs supplied for Elk Lake Branch	$3 00	
40465—Ties	73 59	
40469—Ties	41 87	
40469—Switch sets	67 19	
40469—Switch sets	67 19	
40018—Ties	113 61	
40020—Switch sets	154 33	
40098—Ties	34 68	
42000— "	22 40	
42000— "	51 71	
43240*a*— "	13 96	
43240*a*— "	22 40	
		$665 93

A. A. Fraser, Resident Engineer's Dept., North Bay, Ont.

41087—Expense account, April and May, 1913	$8 50	
42353—Expense account, June, 1913	8 50	
38039—Expense account, April to November, 1912	22 25	
		$39 25

E. Frank, Iroquois Falls, Ont.

39463—Ties	$210 78	
37938— "	221 43	
40016— "	188 34	
40418— "	42 84	
43240— "	67 14	
		$730 53

J. Fontaine, Wah-Tay-Beg, Ont.

40100*a*—Ties	$166 00	
43240—Ties	55 34	
		$221 34

Allan Ferguson, Roadmaster's Dept., North Bay.

40007—Expenses, December, 1912	$5 00	
		$5 00

Frisco Refrigerator Line, St. Louis, Mo.

42972—Car service balance, August, 1913	$2 67	
		$2 67

S. Furniss, Beaverton, Ont.

43156—Tile	$133 00	
		$133 00

Grand Trunk Railway.

37461—Freight settlement for week ended November 7th, 1912.	$382 39	
37467—On account interline freight balance, November, 1912	5,000 00	
37549—Freight settlement, week ended November 14th, 1912	291 59	
37553—Freight settlement, week ended November 21st, 1912	472 27	
37555—On account interline freight balance, November, 1912	6,000 00	
37563—On account interline freight balance, November, 1912	6,000 00	
37587—Freight settlement, week ended November 30th, 1912	144 29	
37645—On account Interline freight balance, November, 1912	6,000 00	
37667—Car service balance, August, 1912 (omitted previous settlement)	40 20	
37807—Interline freight balance, November, 1912	8,948 58	

GRAND TRUNK RAILWAY.—*Continued.*

36544—On account Interline freight balance, December, 1912 .	6,000 00
36580—On account Interline freight balance, December, 1912	6,500 00
36598—Interline freight balance, December, 1912	6,500 00
36622—Freight settlement for week ended December 31st, 1912 .	396 34
37943—Installing telephone and telegraph instruments in yard office	130 56
38011—Switching charges, September and October, 1912, car repairs, proportion of expenses to cars.....	584 25
36644—Interline freight balance, December, 1912	7,500 00
38109—Car repairs, bill No. 110945	46 02
38293—Car service balance, October, 1912	708 40
38397—Ticket balance, October and September, 1912	2,941 45
38511—Car repairs, bill Nos. 109250-113832-3-4-9-113840	280 25
Proportion of cost of freight tariffs, joint switching charges, N. B. terminals, November, 1912	
36962—Proportion of terminal expenses on P. & R. tickets, gas supplied car Temagami. Proportion of cost of freight tariffs, joint switching charges, N. B. terminals, November, 1912	414 87
36964—Charges operating parlor cafe cars from October, 1909, to May, 1912	2,309 31
36966—Gas supplied private cars "Temagami" and "Sir James' at Toronto	7 28
37078—Proportion of cost of freight tariffs, October, 1912	56
37080—Supplies to car "Sir James" at Toronto, October, 1912, and proportion of train supplies and expenses, Toronto-South Porcupine service, October, 1912.....	280 38
38533—Account freight settlement, week ended Jan. 14th, 1913	1,093 36
38535—On account Interline freight balance, January, 1913	16,000 00
38543—Account freight settlement for week ended January 21st, 1913	278 79
38547—Account Interline freight balance, week ending Jan. 21st, 1913	6,500 00
37206—Car service balance, November, 1912	668 50
37344—Interline freight balance, December, 1912	5,644 64
38569—Account freight settlement, for week ended Jan. 31st 1913	1,004 78
38571—Account Interline freight balance, week ending Jan. 31st, 1913	9,000 00
37446—Car repairs, bills Nos. 115775, 115774, 115781	103 72
38677—Account freight settlement, for week ended, Feb. 7th, 1913	521 34
37690—On account Interline freight balance, February, 1913 ..	2,800 00
37694—On account Interline freight balance, week ending February 14th, 1913	2,500 00
38795—Supplies furnished exhibition car at Ottawa, Nov., 1912	2 48
38797—Joint switching, North Bay terminals, December, 1912 .	102 68
38841—Interline freight balance, January, 1913	5,759 23
37760—On account freight settlement, for the week ended February 21st, 1913	374 94
37762—On account Interline freight balance, week ending February 21st, 1913	4,000 00
37788—Settlement of claims as per statement attached to voucher	35 66
38923—Fifty per cent. charges made against C. P. Ry. for scaling car at North Bay Junction, December, 1912	3 50
38925—Undercharge line service bill, September and October, 1912. Proportion line service charges, November, 1912	290 97
38979—Car repairs, bill No. 66704	21 93
39051—Value of G. T. cars No. 302495 and 301824, destroyed August 7th and 8th, 1912	697 52
37830—Cost assisting to unload ballast, Nipissing Junction, spur line, November, 1912	11 83
39163—Car service balance, December, 1912	680 95
39267—Ticket balance, November and December, 1912	6,854 76
37894—On account Interline freight balance, February, 1913 ..	4,000 00
39341—Car repairs, September, October and November, bills Nos. 118927, 118930, 1, 2, 3	683 02
39473—Account freight settlement, week ended March 7th, 1913	134 45

GRAND TRUNK RAILWAY.—*Continued.*

39481—Account Interline freight balance, period ending March 14th, 1913	2,000 00
38036—Supplies furnished parlor cafe car, bill No. 118020	9 97
39587—Claims as per statement attached to voucher	246 58
39641—On account of Interline freight balance, period ending March 21st, 1913	4,000 00
39687—Account estimated freight balance period ending March 21st, 1913	4,000 00
38296—Car coal, No. B. and S. 11850, bill No. 114353	234 00
38336—Terminal charges, December, 1912	246 43
38398—Commission on foreign tickets, supplies furnished car "Temagami"	32 34
38400—Fifty per cent. charges made against C. P. Ry. for scaling cars at North Bay Junction, January, 1913	3 37
38402—Supplies, car "Temagami" account No. 119026, account No. 118292, and percentage of loss operating parlor cafe cars Toronto to Englehart	139 64
38500—Car repairs, bills 121350-51-56-57	88 08
39757—Supplies furnished car "Sir James" at Toronto	26 62
39759—Car repairs, bill No. 118926, supplies furnished car "Sir James," joint switching charges, January and February, 1913	578 93
39809—Estimated freight balance, P/E, March 31st, 1913	4,000 00
38700—Ticket balance, January, 1913	1,334 01
38790—Freight settlement, week ending April, 14th, 1913	270 40
38796—On account Interline freight balance, April, 1913	5,000 00
38806—Estimated freight balance, April 14th, 1913	5,000 00
38820—Account Interline freight balance, April 13th, 1913	4,000 00
38926—Claims for shortage and overcharge in weights, claims Nos. 6050, 6155, 6172, 5608	30 00
38584—Car service balance, January, 1913	984 90
38928—Claims Nos. B5601, L99520, B5495, T42932, B17218, B44736 B53709	36 68
40285—Proportion of commission paid in Europe on G. T. Rail orders. Via ports of Halifax and St. John and exchange for Intercolonial Railway, issue of tickets, January, 1913	1 78
40287—One-third net loss operating three parlor cafe cars between Toronto and Englehart, December, 1912	32 50
40429—Car repairs, December, January, 1913, bill No. 123953	87 34
40469*a*—Ticket balance, February, 1913	2,229 80
40469*b*—Interline freight balance, March, 1913	8,272 10
40473—Account freight settlement, week ended May, 7th, 1913..	755 40
39124—Account Interline freight balance, April, 1913	5,000 00
39168—Claims as per statement attached to voucher	1,067 92
39170—Claims as per statement attached to voucher	825 94
39172—Claims as per statement attached to voucher	360 66
39174—Claims as per statement attached to voucher	119 83
40475—Account Interline freight balance, May, 1913	4,000 00
40523—Freight settlement, week ended May 14th, 1913	952 72
40525—Account Interline freight balance, May, 1913	5,000 00
39302—Car service balance, March, 1913	1,948 73
39390—Ticket balance, March, 1913	2,178 09
40515—Account Interline freight balance, May, 1913	5,000 00
39952—Interline freight balance, April, 1913	12,670 77
40561—Claims as per statement attached to voucher	210 03
39960—Proportion of expenses of passenger cars running between Toronto and Cochrane, February, 1913	198 69
39962—Fifty per cent. charges made against C. P. Ry. for scaling cars at North Bay, March, 1913	3 75
39964—Proportion of commission, European business, Feb., 1913	4 24
39966—Equipment furnished cafe car, supplies and labor for car "Sir James"	39 74
39968—One-third net loss operating parlor cafe cars between Toronto and Englehart, January, 1913	85 72
40062—Car repairs, bills, Nos. 125972-125976-7-8, Jan. and Feb., 1913	217 35

GRAND TRUNK RAILWAY.—*Continued.*

40625—Interline freight balance, February, 1913	2,938 63
40649—Cost of hauling joint switch engines, Nos. 151 and 152 to Nosbonsing	22 40
40651—Proportion of cost, freight tariffs, March 10th, 1913	3 43
40781—On account Interline freight balance, May, 1913	7,000 00
40679—Supplies furnished car "Sir James," March, 1913	12 19
40855—Charges against C. P. R. for scaling cars at North Bay, April, 1913	9 13
40138—Overcharge in weight and rate on silver ore, claims Nos. 6402, 6361	42 09
40162—Claims as per statement attached to voucher	151 29
40196—Account Interline freight balance, June, 1913	5,500 00
40228—Account Interline freight balance, June, 1913	6,000 00
40258—Freight settlement, week ended June 21st, 1913	540 38
41299—Car repairs, February and March, 1913, bills Nos. 128517, 19, 20, . . .	83 31
40434—On account Interline freight balance, June, 1913	2,000 00
40514—Account freight settlement, week ended June 30th, 1913	115 80
40540—Joint switching, months March and April, 1913	349 89
40542—One-third net loss in operating parlor cafe cars between Toronto and Englehart, February, 1913	111 88
40544—Proportion of expense of passenger cars between Toronto and Cochrane, March, 1913	198 24
40594—Supplies, car "Sir James," Toronto	5 76
40596—Proportion of cost of tariffs issued during February, 1913	1 94
40654—Our proportion of commission paid in Europe on European G. T. R. rail orders issue of tickets, April, 1913	20 16
40758—Car service balance, April, 1913	1,109 80
40848—Ticket balance, April, 1913	1,472 44
40872—Car repairs, No. 12872	73
40996—On account Interline freight balance, June, 1913	1,000 00
40998—Joint switching, North Bay terminals, May, 1913	148 05
41395—Freight settlement, week ending July 7th, 1913	402 87
41455—Claims as per statement, 1911-1912	661 77
41509—Account Interline freight balance, July, 1913	4,000 00
41539—Proportion of expense of passenger cars between Toronto and Cochrane, April, 1913	188 72
41599—Car repairs, April 30th, 1913, audit No. 130431-2-3-4-5	489 36
41691—Freight settlement, week ending July 21st, 1913	427 06
41693—Interline freight balance, ending July 14th, 1913	4,000 00
41695—One-third net loss operating parlor cafe cars between Toronto and Englehart, March, 1913	25 15
41741—Copies joint Passenger Tariff No. D17 and Tariff No. T3, May, 1913	81 24
41334—Interline freight balance, June, 1913	11,653 49
41849—Proportion of expense of cars running between Toronto and Cochrane, bill No. 132599	295 17
41851—Fifty per cent. charges made against the C. P. Railway for scaling cars at North Bay Junction, May and June, 1913	8 50
41963—Proportion of cost of freight tariffs, April, 1913	64
41975—On account of Interline freight balance, July, 1913	5,000 00
42025—Car service balance, May, 1913	1,312 25
42133—Car repairs, bill No. 123950	62 00
42135—Car repairs, bill No. 132593	182 80
42163—Account, Interline freight balance, July, 1913	5,000 00
41454— " " " August, 1913	5,000 00
41502—Freight settlement for week ended August 14th, 1913	167 59
41524—Claims as per statement attached to voucher	192 81
41560—Overcharge in rate mdse., claim No. 7069	1 89
41628—Account, Interline freight balance, August, 1913	3,000 00
41630— " " " August, 1913	6,000 00
41646—Claims as per statement attached to voucher	70 24
41788—Car service balance, June, 1913	1,119 39
41890—Overcharge on B/C No. 15212 and 15214, March and April, 1913	26 39

GRAND TRUNK RAILWAY.—*Continued.*

42054—Joint switching, North Bay terminals, June, 1913	326 31	
42056— " " " July, 1913	150 90	
42102—Account, Interline freight balance, August, 1913	5,000 00	
42499—Claims as per statement attached to voucher	69 71	
42617—Proportion of expense of passenger cars running between Toronto and Cochrane, bill No. 136501	181 37	
42619—Equipment furnished car "Tetapaga" by Toronto store-room, April 9th to May 2nd, 1913	42 96	
42621—For one-third net loss operating three parlor cafe cars between Toronto and Englehart, May, 1913	27 50	
42653—Claims as per statement attached to voucher	22 40	
42697—Breakage of glassware on cafe car No. 2602, caused by rough shunting in Englehart yards, June 26th, 1913	1 90	
42699—Supplies furnished car "Sir James," account No. 132597	4 71	
42727—Account, freight settlement week ended Sept. 14th, 1913	202 85	
42729—Account, Interline freight balance, September, 1913	3,000 00	
42777— " " " September, 1913	4,000 00	
42875—Car service balance, July, 1913	1,148 90	
42961—One-third net loss in operating three parlor café cars between Toronto and Englehart, June, 1913	22 66	
42344—Car repairs, bills No. 132596, 132592, 132595, 132594	100 48	
42346— " bill No. 128518	666 12	
42348— " bills No. 136496-7-8	40 68	
43103*b*—Account, freight settlement, week ending Sept. 30th, 1913	745 55	
43109— " Interline freight balance, September, 1913	3,000 00	
42502—Supplies furnished car "Sir James" at Toronto, June, 1913	11 33	
43217—Car repairs, bills Nos. 14589-14869	14 45	
42482—Interline freight balance, August, 1913	16,499 97	
43409—Account, Interline freight balance, September, 1913	5,000 00	
42598— " freight settlement, week ending October 7th, 1913	978 51	
42704— " Interline freight balance, October, 1913	5,000 00	
42718—Claims as per statement attached to voucher	39 09	
42752—Account, freight settlement, week ended October 14th, 1913	760 19	
42828—Proportion of terminal charges of P. & R. tickets in exchange for G. T. European rail orders drawn on Port of Philadelphia	1 26	
42830—Gas supplied car "Abitibi," bill No. 137842; supplies furnished car "Sir James," bill No. 137842	9 75	
42844—On account Interline freight balance, October, 1913	5,000 00	
43617—Interline freight balance, May, 1913	13,767 96	
42908—Account, freight settlement, week ended October 21st, 1913	237 34	
42974—Car service balance, August, 1913	1,498 50	
43627—Interline freight balance, September, 1913	12,890 13	
43629— " " July, 1913	8,355 11	
43220—Joint switching, North Bay terminals, August, 1913	166 59	
43280—Car repairs, bills No. 137846, 137840, 140417	38 34	
43304—Freight settlement for week ended October 31st, 1913	135 33	
43364—On account, Interline freight balance, October, 1913	5,000 00	
43378— " " " October, 1913	6,000 00	
43462—Car repairs, bills No. 140415, 140416, May, June, July, 1913	48 12	
		$399,586 93

MICHAEL GREGG, PEMBROKE, ONT.

39721—Loss, trunk and H. H. goods	$11 40	
		$11 40

GRANDA HERMANOS Y CO., MONTREAL, QUE.

39871—Loss, cigars, claim No. 6328	$9 88	
		$9 88

L. A. GREENE & CO., COCHRANE, ONT.

39873—Damage to closet bowl, claim No. 5944	$6 38	
		$6 38

GALT, PRESTON & HESPELER RAILWAY.

41483—Undercharge in rate, lumber, claim No. 6655	$2 45	
		$2 45

GUNNS, LTD., WEST TORONTO, ONT.

39867—Loss, meat spoiled, claim No. 5964	$55 14	
		$55 14

GALENA SIGNAL OIL CO., TORONTO, ONT.

38095—Oils	$560 50	
37570—Signal oil	43 88	
39373—Oils	897 19	
38394—Oils, air brake compound	1,067 02	
40207—Oils, signal, rod cup grease	842 14	
40925—Oils, compound, etc.	974 77	
42181—Air brake compound	365 68	
42250—Oils	714 07	
43158— "	629 41	
		$6,094 66

GEORGE GORDAN & CO., CACHE BAY, ONT.

38107—White pine	$392 89	
37568—Lumber	338 30	
38292—Pine	402 77	
40923—Lumber	1,608 49	
40340—Pine	917 85	
41050—Lumber	1,264 61	
42425—Pine	420 00	
41940—Crossarms	210 00	
43037—Pine	1,040 89	
43441— "	1,197 74	
43624—Lumber	1,333 24	
		$9,126 78

GENERAL SUPPLY CO. OF CANADA, LTD., OTTAWA, ONT.

38097—Pipe fittings	$66 07	
37576—Tees, unions and elbows	27 32	
40345—Pipe fittings	96 57	
39778—Pipe fittings	67 98	
40470—Tube fittings	112 49	
40472—Valves	65 60	
41048—Dart unions	18 80	
41266—Pipe fittings	4 05	
42177— "	9 52	
42179— "	26 82	
42248— "	15 41	
43654— "	10 54	
43720— "	2 09	
		$523 26

"GLOBE" PRINTING CO., TORONTO.

37665—Year's subscription *Daily Globe*, November 30th, 1912, to November 30th, 1913	$5 00	
40538—Advertising, Cobalt Station grounds	27 60	
		$32 60

WILLIAM GOOD, MATHESON, ONT.

40465—Ties	$218 55	
40098— "	181 77	
		$400 32

D. GAUTHIER, COCHRANE, ONT.

39601—For N. ½ Lot 5, Con. 5, Lamarche, 1.1 acres	$22 00	
		$22 00

F. R. Gibson, Haileybury, Ont.

38930—Damage to closet bowl in transit and freight charges....	$6 02		
38932— " radiator in transit, claim No. 6341.....	2 90		
39190— " bath tub in transit, claim No. 6367.....	5 00		
			$13 92

Garlock Packing Co., Hamilton, Ont.

38138—Packing	$31 34		
41046— "	113 72		
			$145 06

General Accident, Fire & Life Assurance Corporation, Toronto.

38545—Amount overpayment on loss by fire at Grey Station	$40 00		
			$40 00

W. A. Graham, Purchasing Agent & Storekeeper, North Bay, Ont.

37507—Services rendered	Commission,	November, 1912	$175 00		
36574— "	"	December, 1912	175 00		
38669— "	"	January, 1913	185 00		
37892— "	"	February, 1913	185 00		
39799— "	"	March, 1913	185 00		
39114— "	"	April, 1913	185 00		
40739— "	"	May, 1913	185 00		
41038— "	"	June, 1913	185 00		
42161— "	"	July, 1913	185 00		
42180— "	"	August, 1913	185 00		
43415— "	"	September, 1913	185 00		
43374— "	"	October, 1913	185 00		
					$2,200 00

Grand & Toy, Toronto, Ont.

37771—Rubber bands	$28 50		
37396—Office stationery	113 96		
38240—Transfer cases	8 00		
38396—Supplies, office stationery, etc.	26 95		
39958—Stationery, as per statement	58 47		
41170— " "	14 01		
42166—Rubber bands	28 50		
42779—Office supplies, as per statement	55 30		
43329—Perforator	4 51		
42676—Office supplies	17 43		
43216—Stationery supplies	14 72		
43656—Transfer cases	3 80		
			$374 15

Great North Western Telegraph Co., of Canada, Toronto, Ont.

37945—Messages, November 12th and 14th, 1912	$3 99		
38013—Messages, October 1st and 25th, 1912	1 60		
36742—Telegraph service, month of November, 1912	2 74		
36910—Telegraph account, December, 1912	2 22		
37392—Telegraph messages, North Bay	5 24		
38038—Messages, Jan., 1913, North Bay	5 08		
38338—Telegraph service, February, 1913	4 01		
39761—Messages, February, 1913, North Bay	1 99		
39636—Telegraph message	61		
40647—Telegraph messages	53		
40853—Telegraph message, April 16th	50		
40911—Telegraph message, North Bay	63		
40374—Telegraph message, Toronto office	1 34		
41000—Telegraph message	28		
41338—Telegraph service, North Bay	30		
41853—Telegraph service, June, 1913, North Bay	83		
41472—Telegraph message, July 18th, 1913	71		

GREAT NORTH WESTERN TELEGRAPH CO., OF CANADA.—*Continued.*

42623—Telegraph service, North Bay	3 07	
42781—Telegraph service, August 4th, North Bay	39	
42783—Telegraph service, August 18th, North Bay	3 97	
42959—Telegraph service, August 22nd, North Bay	40	
42826—Telegraph service, September 1st to 27th, 1913	1 96	
43218—G. N. W. tariff books, 1913	7 20	
		$49 59

WM. GOLDSTEIN & CO., TORONTO.

36710—Supplies for private car, Commission's monthly inspection trip	$21 00	
36712—Supplies for private car, Commission's monthly inspection trip	10 50	
37394—Supplies for private car, trip to Perth and return, January 27th, 1913	5 60	
38981—Supplies for private car, trip to Perth and return, January 27th, 1913	6 00	
38040—Supplies for private car, Sir James P. Whitney trip to Ottawa, March 7th, 1913	5 00	
41688—Supplies for private car, Canadian Press Association trip, August 26th, 1913	33 00	
42991—Supplies for private car, Commission's monthly inspection trip, June, 1913	5 00	
43079—Supplies for private car, G. T. R. President's trip to Cochrane, August 25th, 1913	5 00	
42570—Supplies for private car, Commission's monthly inspection trip, October, 1913	5 00	
42674—Supplies for private car, Hon. W. H. Hearst's trip to Winnipeg, August 22nd, 1913	11 00	
43072—Supplies for private car, Commission's monthly inspection trip	5 00	
		$112 10

GREENE PAPER CO., PHILADELPHIA, PA.

39729—Tissue books	$68 74	
40759—Tissue paper	28 50	
		$97 24

GIBSON, PRIBBLE & CO., RICHMOND, VA.

42249—Copies safety appliance pamphlets	$4 40	
		$4 40

B. GREENING WIRE CO., LTD., TORONTO, ONT.

38585—Tinned wire	$2 42	
38848—Brass cloth	34 30	
39416—Copper wire	14 21	
41043—Screen cloth	15 94	
40274—Wire netting	70 53	
40598—Copper wire	16 39	
41517—Steel rope	3 75	
41855—Brass riddle cloth	1 76	
41931—Brass riddle cloth	77 17	
43179—Steel rope	7 17	
43437—Steel rope	11 54	
43324—Brass cloth	51 45	
		$306 63

GUTTA PERCHA AND RUBBER MANUFACTURING CO., LTD., TORONTO, ONT.

37773—Steam hose, 1⅛" redstone sheet packing, water hose and bands	$276 19	
37574—Pattern matting 3-32"	23 17	
38713—Boots	19 50	

GUTTA PERCHA AND RUBBER MANUFACTURING CO., LTD—*Coneinued.*

38793—Rubber goods	163 82	
37908—Valves, hose, packing, etc.	225 74	
39501—matting and hose	103 35	
38243—Tubing	25	
38850—Hose, etc.	81 85	
40141—Hose, sheet packing, boots, etc.	315 48	
39041—Hose (air)	108 58	
40527—Water hose	116 63	
40242—Freight deducted in error, invoice of March 7th, 1913	71	
40278—Hose (tender)	6 63	
41149—Matting	22 05	
41505—Boots, packing	87 76	
41138—Air brake hose	265 30	
42301—Hose, steam	29 32	
42194—Suction hose	83 81	
43041—Steam hose	36 07	
43127—Rubber material	31 07	
43439—Hot water hose	54 12	
43328—Steam hose, pattern and matting	74 74	
		$2,126 14

W. A. GRIFFIN, SUPERINTENDENT OF TRAFFIC, NORTH BAY, ONT.

37505—Services rendered Commission, November, 1912	$225 00	
37725—Travelling expenses, November, 1912	11 50	
36572—Services rendered Commission, December, 1912	225 00	
36770—Travelling expenses, December, 1912	15 90	
38667—Services rendered, January, 1913	250 00	
38821—Expenses, January, 1913	13 30	
37890—Services rendered, February, 1912	250 00	
37978—Travelling expenses, February, 1913	15 65	
39797—Services rendered Commission, March, 1913	250 00	
39112—Services rendered Commission, April, 1913	250 00	
39138—Travelling expenses, March, 1913	11 00	
39140—Travelling expenses, April, 1913	30 65	
40737—Services rendered Commission, May, 1913	250 00	
40652—Travelling expenses, May, 1913	11 85	
41036—Services rendered Commission, June, 1913	250 00	
41697—Travelling expenses, June, 1913	21 20	
42159—Services rendered Commission, July, 1913	250 00	
42387—Travelling expenses, July, 1913	18 40	
42178—Services rendered Commission, August, 1913	250 00	
42711—Travelling expenses, August, 1913	10 60	
43413—Services rendered Commission, September, 1913	250 00	
43505—Travelling expenses, September, 1913	19 70	
43372—Services rendered Commission, October, 1913	250 00	
43436—Travelling expenses, October, 1913	15 15	
		$3,144 90

THE GAZETTE, MONTREAL, QUE.

40895—Advertisement, Cobalt station grounds	$27 30	
		$27 30

GOWANS, KENT & CO., LTD., TORONTO, ONT.

36740—Dishes	$2 20	
42096— "	5 51	
43043— "	38 60	
		$46 31

FRED. GILLIAN, PORT ARTHUR, ONT

41414—Overcharge in rate on settlers' effects	$1 65	
		$1 65

GURNEY SCALE COMPANY, HAMILTON, ONT.

40272—Alarm tills	$11 76	
		$11 76

WM. GALBRAITH, MONTREAL, QUE.

40102—For N. ½ Lot 2, Con. 3, Calvert	$150 00	
		$150 00

W. GAMBLE, NUSHKA, ONT.

38163—Ties	$2 40	
40469— "	128 00	
40100*a*— "	25 02	
40100*a*— "	42 67	
		$198 09

GURNEY FOUNDRY CO., LTD., TORONTO, ONT.

38103—Repairs to grate, van stove	$36 15	
38587—Stove	19 24	
37904—Stoves	76 94	
39283— "	42 38	
40343— "	25 00	
40927—Ash door and screws for plate	1 50	
43129—Stoves	27 93	
43331—Stove repair parts	13 50	
43545—Stove, and repair parts	16 07	
		$258 71

GRAND RAPIDS AND INDIANA RAILWAY, GRAND RAPIDS, MICH.

38447—Car repairs, bill No. 12742	$1 40	
37322—Ticket sales, November, 1912	2 02	
39047—Car repairs, bill No. 13119	80	
40760—Car service balance, April, 1913	8 10	
42976—Car service balance, August, 1913	3 15	
		$15 47

GULF & SHIP ISLAND RAILROAD, GULFPORT, MISS.

37208—Car service balance, November, 1912	$2 80	
39165— " " December, 1912	1 05	
38586— " " January, 1913	5 40	
39304— " " March, 1913	4 95	
40060—Car repairs, bill No. 23591	6 33	
40944— " January 18th to March 15th, 1913	4 46	
41790—Car service balance, June, 1913	2 70	
42274—Car repairs, bill No. 25046	92	
42877—Car service balance, July, 1913	6 75	
		$35 36

GORDAN DAVIES CO., LTD., HAILEYBURY, ONT.

36908—Supplies furnished auxiliary car No. 2 at Timmins, month of October, 1912	$6 85	
37710—One bundle pails damaged in transit, claim No. 5899	2 80	
42655—Overcharge in weight, meat, claim No. 7123	15 87	
		$25 52

B. GARDINER, THORNLOE, ONT.

38565—Lumber	$26 00	
41971—Loading poles	11 25	
41971—Telegraph poles	97 50	
41971— "	56 25	
41971—Loading poles	6 75	

B. Gardiner, Thornloe, Ont.—*Continued.*

42000—Telegraph poles	70 30	
42000— "	75 00	
42098—Tamarac	185 34	
43103—Ties	37 95	
		$566 34

Granite Railway Signal Co., Pittsburgh, Pa.

37572—Fusees and torpedoes	$82 50	
38711—Fibre torpedoes	60 00	
		$142 50

John & Frederick Granger, North Bay, Ont.

38906—Lot 71, Worthington Street, North Bay Junction	$1,350 00	
		$1,350 00

Albert D. Gibson, Toronto.

40416—Bleached linen damask cloths, woven "T. & N. O. Ry.", 50"x60"	$552 00	
41929—Apron strings	6 60	
		$558 60

S. Gibson, Tomstown P.O., Ont.

40469—Ties	$315 24	
40020—Switch sets	33 60	
40100*a*—Ties	67 30	
41971—Ties	22 43	
42000—Ties	11 20	
		$449 77

Great Northern Railway, St. Paul, Minn.

38295—Car service balance, October, 1912	$20 00	
39049—Car repairs, October, 1912	8 96	
40431— " November–December, 1912, bill No. 1368	7 59	
40064— " bill No. 3260	16 09	
41263— " February, 1913, bill No. 4418	7 89	
40942— " March 19th, bill No. 1913	10 89	
41597— " April 3rd, audit No. 8411	13 43	
41862—Ticket balance, June, 1913	43 35	
42340—Car repairs, bill No. 10032	4 14	
43219—Car repairs, bill No. 12307	2 57	
43284—Car repairs, bill No. 14602	1 54	
		$136 45

W. J. Gage & Co., Ltd., Toronto, Ont.

41687—Envelopes	$22 50	
42100—Envelopes	10 60	
		$33 10

Georgia, Florida & Alabama Railway, Bainbridge, Ga.

41794—Car service balance, June, 1913	$4 95	
		$4 95

Georgia Railway, Augusta, Ga.

37022—Car repairs, July–August, 1912, bill No. 26016	$2 31	
39308—Car service balance, March, 1912	10 25	
40058—Car repairs, audit No. 27198	8 49	
42342—Car repairs, bill No. 28076	34	
		$21 39

C. & H. D. Gamble, Toronto, Ont.

38715—Copy of agreement between J. H. Patterson and the Hammer Mill Paper Co.	$1 50	
		$1 50

Georgia Southern & Florida Railroad, Macon, Ga.

38297—Car service balance, October, 1912	$3 85	
37210—Car service balance, November, 1912	5 95	
39167—Car service balance, December, 1912	2 10	
38588—Car service balance, January, 1913	45	
39306—Car servicce balance, March, 1913	22 35	
40066—Car repairs, audits No. 1–262	11 06	
40762—Car service balance, April, 1913	45	
41595—Car repairs, audit No. 319	1 02	
42027—Car service balance, May, 1913	22 50	
41792—Car service balance, June, 1913	8 55	
42978—Car service balance, August, 1913	13 95	
43460—Car repairs, bill No. C311	1 35	
		$93 58

Gallagher & Co., Ltd., Toronto, Ont.

40432—Supplies furnished car "Sir James," Commission trip of inspection, May, 1913	$23 27	
41739—Supplies furnished car "Sir James," Commission trip of inspection, June, 1913	23 94	
41888—Supplies furnished car "Sir James," Commission trip of inspection, July, 1913	15 30	
		$62 51

J. D. Glover, Cochrane, Ont.

37708—Loss, one case condensed milk on G. T. rails, claim No. 5854	$4 07	
		$4 07

Grand International Brotherhood of Locomotive Engineers, Montreal, Que.

38956—Advertising in "Souvenir Book," August, 1913	$60 00	
40477—Donation towards union meeting, Montreal, August, 1913	40 00	
		$100 00

J. H. Goerk, Earlton, Ont.

38163—Ties	$52 40	
		$52 40

S. Greenwood, Liskeard, Ont.

40577—Loss, flour, claim No. 6020	$14 30	
41883—Overcharge in weight on hay	4 87	
		$19 17

Gillies Bros., Ltd., Gillies Depot, Ont. (and Braeside, Ont.).

36788—Rebate, siding agreement, claim No. 5886	$782 00	
36906—26 hours' labor, one man and team	13 25	
39865—Overcharge in rate, car horses, claim No. 6419	4 75	
39869—Overcharge in rate, car horses, claim No. 6420	4 38	
38880—Refund stop-off charge, service not performed	3 00	
39004—Overcharge in weight, on horses, claim No. 6422	5 62	
40376—Overcharge in weight on horses, claim No. 6421	12 73	
		$825 73

GRILLS, ELLIOTT & GRILLS, LISKEARD, ONT.

41351—Loss one box soap, shortage, claim No. 6580	$4 50	
39875—Loss 5 lbs. butter, short, claim No. 6199	1 51	
39877—Four bottles catsup short, claim No. 6200	32	
38974—Loss flour bags, barley feed, claim No. 6157	5 92	
		$12 25

A. GAUTHIER, ENGINEERING DEPT., NORTH BAY, ONT.

37354—Travelling expenses, June, 1912	$12 15	
40100—Ties	33 66	
		$45 81

AGENT AT GILLES' DEPOT, ONT.

41656—Outstanding account, overcharge, icing claim No. 6756	$13 75	
		$13 75

GALVESTON & HARRISBURG & SAN ANTONIO RY. CO., HOUSTON, TEXAS.

39169—Car service balance, December, 1912	$9 10	
38590— " " January, 1913	6 85	
38299— " " October, 1912	10 15	
37212— " " November, 1912	6 75	
43282—Car repairs, bill No. O-89746	1 56	
		$34 41

GRANT & KENNEDY, LISKEARD, ONT.

38105—Lumber	$303 05	
36802—Overcharge in weight on horses, claim No. 5647	9 56	
37578—Lumber	244 30	
38869—Lumber	612 12	
39461—Telegraph poles	4 50	
38294—Pine	320 00	
40205—Cedar	438 49	
39440—Lumber	183 01	
40723—Spruce	260 58	
40342—Spruce	286 36	
43039—Lumber	250 50	
		$2,912 47

LEO GAUTHIER, NORTH BAY, ONT.

37833—Travelling expenses, November, 1912	$2 50	
36870— " " December, 1912	2 00	
38819— " " January, 1913	2 25	
37980— " " February, 1913	1 10	
39826— " " April, 1913	3 05	
		$10 90

JOHN GEORGE HEASLIP, ONT.

37938—Ties	$105 24	
40018—Fence posts	44 64	
		$149 88

J. GINN, MATHESON, ONT.

40465—Ties	$332 88	
		$332 88

GRAHAM NAIL WORKS, TORONTO, ONT.

38583—3, 4, 5 inch wire nails	$108 58	
38871—Roofing nails	7 25	
37906—3, 4, 5 inch wire nails	66 15	
40143—2, 4, 5 inch wire nails	169 10	

GRAHAM NAIL WORKS, TORONTO, ONT.—*Continued.*

40519—2½,4 inch wire nails	56 10	
40276—3, 4, 5, 6 inch wire nails	110 00	
41153—1¼ common nails	16 76	
41942—1¼, 3 inch wire nails	110 75	
43125—1¼, 3 inch wire nails	29 64	
42778—4, 5 inch wire nails	62 72	
43326—1½, 2½, 4, 5 inch wire nails	47 70	
		$784 75

GOUROCK ROPEWORK EXPORT CO., MONTREAL, QUE.

39375—Manilla rope	$62 47	
40209— " "	4 66	
41181— " "	17 31	
40468— " "	92 31	
41268— " "	4 26	
		$181 01

A. GIBBONS, MASTER MECHANIC'S DEPT., ENGLEHART, ONT.

38953—Expenses, January, 1913	$1 25	
		$1 25

GENERAL MANIFOLD & PRINTING CO., FRANKLIN, PA.

30203—Printing forms	$15 00	
39776— " "	44 98	
40757— " "	52 00	
41689— " "	42 40	
		$154 38

J. M. GARLAND, DWYER HILL P.O., ONT.

36546—S ½ lot 11, concession 2, Matheson Townsite, veteran claim, 4 acres	$25 00	
		$25 00

J. GAULT, IROQUOIS FALLS, ONT.

36650—Ties	$74 67	
37126— "	220 50	
37938— "	51 51	
40016— "	113 85	
42000— "	76 67	
		$537 20

GRATTON & GURTIN, COBALT, ONT.

36650—Ties	$744 21	
36650— "	306 87	
		$1,051 08

F. GAGNON, IROQUOIS FALLS, ONT.

40465—Ties	$89 34	
40469— "	31 34	
40098— "	10 45	
43240— "	115 74	
		$246 87

GOODYEAR TIRE & RUBBER CO., LTD., TORONTO, ONT.

38581—Water hose	$120 98	
39499—Steam heater hose	179 72	
40139—Rubber bands and hose	125 34	
41151—Air hose	174 60	
42164—Rubber bands	24 25	
43766—Rubber bands	12 25	
		$637 14

W. H. Godfrey, Nushka, Ont.

39461—Ties	$129 48	
		$129 48

Chas. Godfrey, Homer Siding, Ont.

40465—Ties	$73 62	
40418— "	46 53	
		$120 15

Jos. Gagnon, Nushka, Ont.

40469—Ties	$77 09	
40098— "	79 56	
40098— "	25 69	
41293— "	33 09	
		$215 43

Griffin & Bunkerhoff, Windsor, Ont.

39870—Wheel truing brake shoes	$126 00	
		$126 00

Georgia & Florida Railway, Augusta, Ga.

41261—Car repairs, February, 1913, bill No. 2948	$0 44	
		$0 44

The Guelph Herald, Guelph, Ont.

40893—Advertisement, Cobalt Station grounds	$14 25	
		$14 25

J. Gamble, Nushka, Ont.

40418—Ties	$113 33	
41971— "	37 78	
		$151 11

W. F. Good, Elk Lake, P.O., Ont.

41293—Ties	$511 15	
40418— "	213 20	
40418— "	24 00	
43070—Amount deposited on construction of siding at MP 19, Elk Lake Branch	$146 77	
		$895 12

J. S. George, Haileybury, Ont.

41431—Overcharge in weight, vegetables, claim No. 6346	$17 83	
41412—Amount realized, sale of goods on hand refused	$6 50	
		$24 33

Glover, Edey & McCallum, Timmins, Ont.

36808—Shortage two cases corn flakes and freight charges, claim No. 5816	$5 96	
		$5 96

Green Bay & Western R.R. Co., Green Bay, Wis.

42879—Car service balance, July, 1913	$5 85	
		$5 85

GERMAN AMERICAN TANK LINE, CHICAGO, ILL.

42881—Car service balance, July, 1913	$0 77	
42980—Car service balance, August, 1913	77	
		$1 54

GEDDES, TYSON LUMBER CO., WIARTON, ONT.

43622—Lumber	$386 67	
		$386 67

BRITISH HOTEL (E. THIB, PROP.), CHARLTON, ONT.

37834—Meals, W. B. Crombie	$3 00	
		$3 00

G. A. HENDERSON, COCHRANE, ONT.

41487—Damage to household goods, claim No. 6467	$38 15	
37911—Connecting water main to Union Station, Cochrane	16 56	
37712—Damage to sewing machine, claim No. 6268	30 00	
		$84 71

JOHN HAMILTON, THORNLOE, ONT.

41511—Ties	$106 11	
41511— "	154 49	
42000— "	86 87	
		$347 47

HAMILTON STAMP & STENCIL WORKS, LTD., HAMILTON, ONT.

38111—Stamp and dater, seal, N.C. Ry.	$3 13	
38607—Seal, dater and ribbons	4 41	
37586—Model dater and bands for same	2 09	
39379—Pattern letters	6 00	
38140—Pattern letters	9 01	
38246—Daters and stamps	27 30	
38298—Stamp	4 48	
40347—Dater, stamps and rack	7 08	
39780—Stationery	2 90	
41045—Dater, ribbons	7 50	
41052—Rubber stamps	2 25	
42183—Rubber stamps	80	
42251—Rubber stamps	1 25	
41946—Seal and dater	3 34	
42106—Stamps	2 17	
42252—Brass pattern letters	10 85	
43333—Dater badges	15 75	
42884—Stamp dater	1 65	
43658—Dater	10 00	
		$121 96

R. D. HOPKINS, IROQUOIS FALLS, ONT.

36968—Service one man and team, 4 days	$16 00	
39709—Shortage one bale mitts, etc., claim No. 6281	8 30	
		$24 30

R. HOPKINS, IROQUOIS FALLS, ONT.

37126—Ties	$44 34	
40465— "	44 94	
39463— "	46 83	
37938— "	47 28	
		$183 39

HAMER & MCGUINTY, EARLTON, ONT.

37086—Meals and provisions supplied, June to October, 1912	$112 62	
37770—Refund of freight charges account, special rate, claim No. 5871	263 72	
		$376 34

A. HOPKINS, IROQUOIS FALLS, ONT.

37126—Ties	$54 30	
39463— "	58 59	
37938— "	41 04	
		$153 93

G. HAWKINS, ENGINEERING DEPT., NORTH BAY, ONT.

43578—Travelling expenses, October, 1913	$1 40	
		$1 40

HOCKING VALLEY RAILROAD, COLUMBUS, OHIO.

38301—Car service balance, October, 1912	$7 35	
37214— " " November, 1912	1 05	
39171— " " December, 1912	9 45	
38592— " " January, 1913	5 40	
39310— " " March, 1913	45 90	
40068—Car repairs audit, Nos. 76049, 77323	6 24	
40764—Car service balance, April, 1913	18 00	
41601—Car repairs audit, No. 78635	41	
43273—Car repairs, June, 1913, audit, No. 79705	17 31	
43464—Car repairs, bill, No. 80979	1 27	
		$112 38

GEO. T. HORTON, CHICAGO, ILL.

39881—Overcharge on shipment machinery, claim No. 6270	$7 26	
		$7 26

HARRIS TIE & TIMBER COMPANY, NEW LISKEARD, ONT.

37126—Switch set	$47 75	
43792—Refund of balance of amount deposited to cover cost of labor connecting pit track and old siding, May, 1913....	43 10	
		$90 85

HAYS' TRACK APPLIANCE CO., GENEVA, N.Y.

39381—Derails	$117 00	
38142—Derails, stands and connections	48 00	
40929—Derails	117 00	
40474—Operating stands	33 00	
		$315 00

R. W. HUNT COMPANY, LTD., MONTREAL, QUE.

37775—Inspection of bars steel	$8 05	
37584—Inspection of rails	94 92	
41047—Inspection of rails	285 09	
41600—Inspection of copper wire, rails, bolts, cont. joints	188 70	
42569—Bolts inspected	1 26	
43222—Inspection of culvert, pipe and joints	20 64	
		$598 66

A. HEASLIP, HEASLIP, ONT.

40018—Ties	$38 16	
		$38 16

HOLLINGER GOLD MINES, LTD., PORCUPINE, ONT.

39640—Labor on locomotive, No. 101 (December, 1912)	$5 00	
41885—Overcharge in weight (empty carboys)	2 62	
		$7 62

GEORGE H. HEES, SON & CO., TORONTO, ONT.

38113—Shades	$10 72	
37580—Shades and moss	17 94	
39377—Horse hair	5 50	
40349—Webbing	8 10	
39590—No. 10 nails	1 00	
39872—Nails	1 00	
41183—Cloth, shades	10 60	
42253—Gimp tacks	1 79	
		$56 65

HUDSON BAY COMPANY, NORTH BAY, ONT.

36790—Loss rice and sugar, claim No. 5834	$3 67	
39879—Shortage sugar, claim No. 5922	2 28	
40164—Loss candy account, damage to case, claim No. 6448	2 40	
41789—Loss jam, pilfered in transit, claim No. 6447	2 62	
		$10 97

HOTEL CANDY CO., LTD., NEW LISKEARD, ONT.

38732—Loss liquor account shortage, claim No. 5825	$8 95	
43132—Board supplied H. J. McAuslam, T. Lynch, D. Moriarty	12 30	
		$21 25

IROQUOIS HOTEL CO., PORCUPINE, ONT.

36628—Rooms and board	$9 00	
37907—Meals and lodging E. Cahill and Jas. Sinton, Nov., 1912	25 00	
37909—Meals and lodging Jas. Sinton and Edgar Cahill, Oct., 1912	8 00	
36970—Meals and lodging Jas. Sinton and Edgar Cahill	5 00	
		$47 00

THE HAILEYBURIAN, HAILEYBURY, ONT.

38877—Subscription to *Haileyburian* from Oct., 1908, to Dec., 1913	$5 25	
40660—Advertisement, Cobalt Station grounds	12 40	
41743—Advertisement tenders for lots, Englehart	6 00	
41745—Advertising lots, Cobalt	4 00	
42574—Advertising lots, Englehart	6 00	
		$33 65

D. A. HENDERSON, COCHRANE, ONT.

40662—Professional services rendered Jos. McCann	$10 00	
		$10 00

MUNICIPAL CORPORATION OF TOWN OF HAILEYBURY, HAILEYBURY, ONT.

37660—Water rates, three months ending December 31st, 1912	$16 99	
38753— " quarter ending March 31st, 1913	16 98	
39486— " three months ending June 30th, 1913	16 99	
39638—Water supplied engines Feb. 19, March 20, 1913	11 76	
41340—Water rates three months ending Sept. 30th, 1913	16 99	
42108—Sewer tile	35 88	
42832—Water rates three months ending December 31st, 1913	16 99	
		$132 58

KING EDWARD HOTEL (I. KENT), ENGLEHART, ONT.

37903—Board and lodging Jas. Sinton and Edgar Cahill.....	$6 00	
37905—Board and lodging Messrs. Bourke, Molloy and Cahill..	10 15	
38983—Board W. B. Crombie, Leo Gauthier and H. Allen	2 25	
37832—Hotel account Jas. Sinton, C. G. Payne, Hugh Allen	12 00	
39492—Board Jas. Sinton	3 50	
40857—Board (A. A. Fraser and two men)	6 00	
40382—Board W. D. Crombie	4 00	
41933—Board Jas. Sinton	3 50	
42571—Board supplied G. Sinton, R. S. Huntington	4 00	
42572—Board and room supplied G. Sinton and R. Huntington....	5 00	
43224—Hotel account Jas. Sinton, R. S. Huntington	6 00	
		$62 40

HEATON'S AGENCY, TORONTO, ONT.

38717—Subscription The Commercial Handbook of Canada	$1 00	
		$1 00

P. C. HOWARD, TORONTO, ONT.

39607—Loss of one box stationery, claim No. 6374	$75 00	
		$75 00

E. M. HOBSON, COCHRANE, ONT.

39484—Supplies furnished month of Oct., 1912	$23 80	
		$23 80

G. V. HARCOURT, ELK LAKE, ONT.

40229—Teaming, December, 1912, January and February, 1913 ..	$50 00	
		$50 00

HUGHES, OWENS COMPANY, LTD., MONTREAL, QUE.

38300—Thumb tacks, buff paper	$33 91	
		$33 91

HOTEL MATHESON (M. A. ATTALLAH, PROP.), MATHESON, ONT.

38879—Room and board Jas. Sinton and Edgar Cahill	$3 00	
40384— " " Keys, O'Donnell and Gleason, April, 1913	8 50	
41476— " " Keys, O'Donnell and Gleason, May, 1913	8 50	
43126— " " H. J. McAuslan, T. Lynch, D. Munity..	15 00	
		$35 00

WINNIPEG HOTEL (HEAVENER BROS.), NORTH BAY, ONT.

39488—Board of Linemen on wire trouble account snowstorm..	$32 25	
		$32 25

ADAM HALL, PETERBORO, ONT.

40280—Ranges and reservoirs	$70 56	
37571—Repairs to ranges	25 02	
		$95 58

HAWKESBURY LUMBER COMPANY, JOCKO, ONT.

37732—Overcharge in weight, hay, claim 6051	$10 24	
		$10 24

AGENT HAILEYBURY STATION, HAILEYBURY, ONT.

39619—Outstanding account, shortage one box electric supplies, claim No. 6380	$0 91	
39621—Outstanding account, refund of account on H. H. goods, claim No. 5574	9 22	
38723—Outstanding account, shortage shipment hardware, claim No. 6326	98	
38736—Outstanding account, shortage trunks, claim No. 6334	2 10	
38738—Outstanding account, double billing by connections, claim No. 6539	2 28	
38934—Outstanding account, overcharge grain, claim No. 6276	12 24	
40140—Outstanding account, shipment refused, claim No. 6740	2 19	
40142—Outstanding account, double billing, claim No. 5321	1 44	
40144—Overcharge in weight beer, claim No. 6290	5 00	
41490—Demurrage assessed in error, claim No. 6994	7 00	
41493—Outstanding account, shipment short, claim No. 6975	1 50	
41495— " " " claim No. 6908	8 14	
41658— " " " claim No. 7166	83	
		$53 83

S. R. HART & CO., SUCCESSORS TO HART & RIDDELL, TORONTO, ONT.

37947—Letter heads	$38 25	
37088—Cards and letter heads	15 00	
39763—Letter heads	70 00	
40479—Letter heads	33 75	
		$157 00

PACIFIC HOTEL (F. J. DALY), NORTH BAY, ONT.

38342—Board J. C. G. McMillan, March 11th, 1913	$5 50	
		$5 50

THOMAS HOOK, AGENT, TORONTO, ONT.

40380—Royal Insurance, No. 271813 (office furniture)	$4 20	
		$4 20

F. H. HOPKINS & CO., MONTREAL, QUE.

39702—Repair parts	$88 35	
40476—Sheaves	114 00	
42187—Castings	56 00	
41944—Chain	135 15	
43660—Repair parts	11 00	
		$404 50

JAMES HARRISON & SONS' CO., LTD., OWEN SOUND, ONT.

41054—Tie plugs	$75 00	
		$75 00

KING EDWARD HOTEL (ARMSTRONG AND KINGSTON), LATCHFORD, ONT.

39611—Shortage six bottles gin and freight charges, claim No. 6297	$2 73	
		$2 73

MR. AND MRS. JOHN HUTSON, TROUT MILLS, ONT.

40378—Lighting of switch lamps and use of house as waiting-room, Oct., 1912, to Nov., 1913	$15 00	
		$15 00

ALLAN HILLS EDGE TOOL CO., LTD., GALT, ONT.

37366—Adzes	$29 16	
37910—No. 5 bench axes	15 68	
38244—Discount deducted from remittance of Feb. 14th invoice, Dec. 17th, 1912	60	
40091—Adze	29 16	
40600—Axes	7 84	
41892—Axes	47 76	
		$130 20

HAMILTON GAS LIGHT CO., HAMILTON, ONT.

39588—Sixteen oz. felt	$89 50	
		$89 50

D. HATTON COMPANY, MONTREAL, QUE.

37734—Price realized for ½ bbl. Scotch herring, refused, claim No. 6109	$7 00	
		$7 00

HAMILTON BRIDGE WORKS CO., HAMILTON, ONT.

37799—Certificate No. 1, steel work delivered at North Bay for 220-foot truss bridge	$22,410 23	
36626—Estimate No. 2, material supplied for 220-foot truss bridge at Montreal River, Elk Lake branch	6,347 84	
38873—Charges in connection with contract No. 3755	48 50	
38875—Steel work delivered as per certificate No. 3	6,216 43	
38072—Certificate No. 4, material and labor supplied Montreal River Bridge	8,000 00	
38074—Material supplied, Montreal River Bridge as per contract No. 3735	596 68	
42721—Final certificate 220-foot truss bridge at Montreal River, Elk Lake branch	695 16	
		$44,314 84

KING GEORGE HOTEL, COCHRANE, ONT. (JNO MARTIN, J. HECTOR CLEMES, PROPS.).

36832—Supplies for car "Temagami"	$3 60	
39661—Loss whiskey account, shortage, claim No. 6476	336 88	
39494—Board and lodging W. R. Keys and party	45 00	
39496—Lunches and accommodation furnished passengers, Nov. 21st, April 1st, 1913	29 30	
38881—Board and rooms, engineers, January, 1913	16 00	
43074—Board supplied Engineering party, Aug. and Sept., 1913..	30 50	
		$461 28

THE HOLDEN COMPANY, LTD., MONTREAL, QUE.

38115—Air hose	$50 00	
37582—Woven steel air hose	40 00	
40931—Iron	37 15	
41270—Iron	58 45	
42185—Diaphragms	180 00	
		$365 60

THE BARRETT HOUSE, GOWGANDA, ONT., THOS. BARRETT, PROP.

40289—Board account (W. J. King and A. E. Keffer)	$44 00	
40653—Board supplied month of April, 1913 (W. R. Keys)	10 00	
		$54 00

KING GEORGE HOTEL, ELK LAKE, ONT.

37901—Board and lodging W. R. Keys and A. H. E. Keffer	$7 50	
40388—Board supplied 14 men surveying party	28 00	
41344—Board and teams supplied, March, 1913, surveying party	38 00	
		$73 50

THE VENDOME HOTEL, HAILEYBURY, ONT.

37082—Meals and room, Sinton and Payne	$8 00	
38883—Meals and room, Sinton, Payne and Macceau	19 50	
38374—Meals and room, Sinton and Allen	2 00	
38404—Dinners, February 3rd, 1913	1 50	
40291—Hotel account (Jas. Sinton and Scott)	3 00	
40495—Board W. R. Crombie and Leo Gauthier	3 50	
40681—Board supplied (Engineering party), April, 1913	9 00	
40658—Board—Macceau, Dodge, Sinton	16 80	
41619—Board, one day, Mulligan, Sinton	3 50	
41598—Room and board, Sinton, Huntingdon	9 00	
41690—Room and board, Sinton, Huntingdon, Allen	9 00	
42575—Hotel account—Jas. Sinton, R. S. Huntingdon, August...	17 00	
42785—Hotel account—Jas. Sinton, R. S. Huntingdon, Sept....	9 00	
		$110 80

HOUSTON & TEXAS CENTRAL R.R., HOUSTON, TEXAS.

40874—Car repairs, April 10th and April 22nd, 1913	$2 90	
43286—Car repairs, bill No. 69084, Aug. 8-25	68	
		$3 58

HERALD PRINTING COMPANY, HAMILTON, ONT.

40546—Advertising, Cobalt Station grounds	$18 00	
		$18 00

H. HASTINGS, EARLTON, ONT.

39461—Ties	$345 96	
40098—Ties	271 98	
		$617 94

HOTEL CEDRIC, COCHRANE, ONT.

37951—Meals and lodging, A. Gauthier, B. S. Comlier, Nov. 21st and 22nd, 1912	$4 00	
40293—Meals and lodging, J. G. McMillan, C. T. Szammer, March 11th, 1913	21 50	
42573—Meals and lodging, C. T. Szammers.....	4 50	
		$30 00

JOHN HENEY & SON, LTD., OTTAWA, ONT.

37565—Overcharge in rate, claim No. 5772	$238 88	
37567—Refund of charges paid twice, claim No. 6015	63 75	
		$302 63

HOTEL CONNAUGHT, SOUTH PORCUPINE, ONT.

37084—Room and board, August, September, October and December, engineers	$49 00	
		$49 00

HILL & CLARK, NEW LISKEARD, ONT.

37772—Overcharge rate, brick, claim No. 5901	$21 81	
		$21 81

THE ARMSTRONG HOUSE, EARLTON, ONT.

38340—Board of surveying party and two cords of wood	$25 00	
36912—Meals and rooms supplied, office rent, five months	36 00	
		$61 00

HUNTINGDON & BROAD TOP MOUNTAIN R.R. & COAL CO., PHILADELPHIA, PA.

37216—Car service balance, November, 1912	$4 20	
38719— " " December, 1912	2 80	
38594— " " January, 1913	7 20	
40766— " " April, 1913	4 95	
41796— " " June, 1913	4 50	
42883— " " July, 1913	3 15	
42982— " " August, 1913	2 70	
		$29 50

THE QUEENS HOTEL, COCHRANE CO.

36932—Board and rooms, Jas. Sinton and E. Cahill	$22 00	
39003—Board and rooms, W. B. Crombie and B. S. Crombie	12 00	
37836—Board and rooms, Messrs. Payne, Holbrooke, Gauthier	24 50	
38364—Board and rooms, Messrs. Payne, Holbrooke, Gauthier	54 00	
40497—Board, Payne, Holbroke, Gauthier	84 00	
40859—Board, Jas. Sinton	2 00	
40861—Board, Jas. Sinton	4 00	
40386—Board supplied, Keys, Gleason, McDonald	21 00	
40656—Meal tickets supplied and room and board surveying party	60 50	
41621—Meal tickets supplied, Holbrooke, Payne, Hagerty, Gauthier, and Mulligan	84 00	
41474—Board supplied, July, 1913 (engineers)	90 00	
42577—Board supplied, August, 1913 (engineers)	84 00	
43128—Board supplied, September, 1913 (engineers)	54 00	
		$596 00

J. HOWE, MASTER MECHANIC'S DEPT., COCHRANE, ONT.

37982—Travelling expenses, February, 1913	$2 50	
		$2 50

C. J. HUTCHINSON, SOUTH PORCUPINE, ONT.

41314—Certificate Nos. 4 and 5, fencing Porcupine branch, December 15, 1912	$364 57	
36624—Fencing Porcupine Branch, Sept. to Oct. 31st, certificate No. 3	582 92	
		$947 49

H. E. HAWKINS, LATCHFORD, ONT.

37671—Work in connection with Latchford Townsite	$50 00	
39565—One flour bin and freight charges, damaged in transit	$1 43	
		$51 43

HOTEL GOLDFIELDS, TIMMINS, ONT.

40390—Board supplied, Sinton, Watson and Mulligan	$18 50	
37899—Meals and rooms for engineers	7 00	
37949—Meals and rooms for engineers	13 50	
43130—Meals and rooms for engineers	4 00	
		$43 00

R. W. HANNAH, TORONTO, ONT.

36594—Overcharge, claim No. 5021	$16 25	
		$16 25

E. HELLER, COCHRANE, ONT., CARE W. H. WARKE.

36602—Loss, pack sack and contents, burnt at Cochrane, account of wreck	$20 00	
		$20 00

MAX. HENRY, COCHRANE, ONT.

37838—Transferring baggage from train No. 1 to T. & N. O. Depot, on account of wreck of engines 122 & 107, February 13th, 1913	$3 00	
		$3 00

BEN HUGHES, COBALT, ONT.

39567—Damage to table, claim No. 6001	$3 00	
		$3 00

JOSEPH HAMILTON, HEASLIP, ONT.

39589—Ties	$199 95	
40014—Ties	44 16	
		$244 11

F. HEASMAN, NEW LISKEARD, ONT.

37714—Loss, account damage to 5 glasses marmalade, claim No. 5852	$0 90	
39883—Damage to rocker in transit, claim No. 6164	97	
40166—Loss milk, account case damaged in transit	41	
41353—Loss one bottle vinegar, broken, claim No. 6750	19	
42657—Refund of amount realized from sale of two bags cracked corn, claim No. 6595	2 95	
		$5 42

HARRIS ABATTOIR COMPANY, LTD., TORONTO, ONT.

37766—Damage tc meat, claim No. 6106	$76 16	
		$76 16

H. G. HALLERBECK, WATCH INSPECTOR, NORTH BAY, ONT.

37984—Travelling expenses, February, 1913	$12 80	
		$12 80

F. HURTZKE, McCOOL P.O., ONT.

39589—Ties	$440 10	
39589—Ties	440 94	
		$881 04

HOLYOKE CARBON & PAPER CO., HOLYOKE, MASS.

38248—Carbon paper	$17 50	
		$17 50

J. HUOT, SOUTH PORCUPINE, ONT.

40469—Ties	$155 52	
40100*a*—Ties	51 84	
		$207 36

J. M. HALL, HAILEYBURY, ONT.

39418—Fees for services (drawing and testing declaration)	$4 00	
		$4 00

HANDLAN-BUCK MANUFACTURING CO., ST. LOUIS, MO.

39782—Hand lanterns, Nos. 176 and 180	$3 62	
		$3 62

JOHN HAGAN, HOMER SIDING, ONT.

40098—Ties	$79 29	
		$79 29

R. S. Hicks, Toronto, Ont.

40230—Overcharge on pulpwood account, misrouting, claim No. 6496	$34 45	34 45

Geo. Hughes, Trout Mills, Ont.

39192—Shortage, one bag chop, claim No. 6695	$1 71	$1 71

Mrs. A. Hoskins, Englehart, Ont.

39490—Towels washed, March 15th to 31st, for trains No. 3 and 4	$1 10	
42993—Towels washed for local trains, July and August, 1913..	1 40	
		$2 50

Thos. Heaslip, Heaslip, Ont.

40018—Ties	$19 38	$19 38

J. Houle, Nushka, Ont.

40098—Ties	$170 73	$170 73

Wm. Hynes, Matheson, Ont.

40664—Manure	$10 00	$10 00

Haggard & Marcusson Co., Chicago, Ill.

40933—Bunks	$210 00	$210 00

Hudon & Orsali, Montreal, P.Q.

41787—Shortage, one box groceries and freight charges, claim No. 6948	$2 89	$2 89

Hogg & Lytle, New Liskeard, Ont.

41439—Siding rebate, November 1st, 1912, to March 18th, 1913, claim No. 6985	$20 00	$20 00

Drs. Hair & McLaren, Cobalt, Ont.

41342—Professional services rendered C. M. Stokes	$12 00	$12 00

A. F. Heyworth, Hearst, Ont.

41660—Loss, 2 teapots, claim No. 6616	3 00	$3 00

Geo. H. Hachborn & Co., Berlin, Ont.

42659—Charge for re-covering two couches damaged by acid in North Bay shed	$11 25	$11 25

H. P. Hanan, Toronto, Ont.

42595—Services rendered the Commission from August 25th to 31st, 1913	$13 55	
42741—Services rendered the Commission, month of Sept., 1913..	60 00	
42610—Services rendered the Commission, month of Oct., 1913...	60 00	
		$133 55

Haileybury Brick & Tile Co., Haileybury, Ont.

42663—Overcharge in rate on brick, claim No. 6927	$15 86	
		$15 86

R. C. Harrison, Haileybury, Ont.

42749—Loss, lumber, car C. P. No. 70966, Earlton fire, Claim No. 7184	$281 86	
		$281 86

Hill, Clark, Francis, Ltd., New Liskeard, Ont.

42634—Overcharge in rate, brick, claim No. 7369	$3 14	
42636—Overcharge in rate, brick, claim No. 7370	2 60	
		$5 74

B. Holbrook, Engineering Dept., North Bay, Ont.

43597—Travelling expenses, September, 1913	$2 10	
		$2 10

Jos. Hetherington, Hamburg, Ont.

43240a—Steel channels	$46 64	
		$46 64

Imperial & Royal Austro-Hungarian Consul-General, Montreal, Que.

36590—In full and final settlement of all claims and demands for the death of D. Marco from alleged injuries received at Nellie Lake ballast pit on July 18th, 1912	$350 00	
		$350 00

Intercolonial Railway of Canada. Moncton, N.B.

38303—Car service balance, October, 1912	$46 90	
38399—Ticket sales, October, 1912	128 96	
38499—Car repairs, reg. No. 118622	2 39	
36834—Amount collected at Cobalt account, general average bond, North Bay to Cobalt, W/B 1822, February 1st	139 17	
37218—Car service balance, November, 1912	46 55	
37324—Ticket balance, November, 1912	333 99	
37450—Car repairs, regis. No. 150421	48	
39053—Car repairs, October, 1912	54	
39173—Car service balance, December, 1912	45 85	
39269—Ticket balance, December, 1912	316 56	
38596—Car service balance, January, 1913	79 65	
38702—Ticket balance, January, 1913	227 97	
39312—Car service balance, March, 1913	188 25	
41265—Car repairs, November, 1912, bill No. 160488	1 00	
40768—Car service balance, April, 1913	51 75	
40946—Car repairs, April, 1913, No. 162275	3 52	
41605—Car repairs, bill No. 164248	2 46	
42029—Car service balance, May, 1913	35 10	
42105—Ticket balance, May, 1913	73 60	
41798—Car service balance, June, 1913	42 82	
42885—Car service balance, July, 1913	75 30	
43048—Ticket balance, August and July, 1913	86 35	
42984—Car service balance, August, 1913	36 45	
43290—Car repairs, bill No. 170463	4 03	
		$1,969 64

ILLINOIS CENTRAL RAILROAD, CHICAGO, ILL.

38305—Car service balance, October, 1912	$7 10	
38451—Car repairs, bill No. 2507, September, 1912	5 55	
37220—Car service balance, November, 1912	75 25	
39175—Car service balance, December, 1912	26 60	
40433—Car repairs, November, 1912, bill No. 2603	1 57	
41267— " July, Oct., 1912; Jan., 1913, bill No. 3121	6 66	
41603— " bill No. 3030	26 25	
42350— " bill No. 2877	2 67	
42352— " bill No. 3278	14 65	
43275— " March to May, 1913	22 63	
43288— " bill No. 2805	12 00	
		$200 93

IMPERIAL OIL CO., LTD., SARNIA, ONT.

36600—Loss, one barrel coal oil, claim No. 5686	$7 61	
38117—Candles, oils, grease, etc.	268 49	
38307—Car service balance, October, 1912	1 60	
37222—Car service balance, November, 1912	5 48	
37688—Oils, grease, gasoline, etc.	340 38	
39177—Car service balance, December, 1912	3 15	
39383—Oils, grease, gasoline, etc.	464 95	
38144—Oils, candles, grease, etc.	495 86	
39663—Overcharge (duplicate payment), oil claim No. 6186	36 65	
38598—Car service balance, January, 1913	5 48	
39885—Overcharge, freight account, error in billing, claim No. 6312	60 04	
39917—Loss, one gasoline drum, claim No. 5387	10 00	
38976—Overcharge in rate, oil claim No. 6536	1 00	
40351—Oils, gasoline, etc.	438 95	
39314—Car service balance, March, 1913	6 25	
39592—Headlight oil	48 34	
39704—Oils, cutting compound	117 79	
39706—Oils	42 46	
39874—Cup grease	17 85	
40579—Overcharge in rate, claim No. 6642	2 82	
40725—Fuel oil	17 74	
40935—Candles	6 60	
41185—Oils	185 52	
40770—Car service balance, April, 1913	3 86	
42031—Car service balance, May, 1913	4 54	
42255—Headlight oil	162 49	
42443—Fuel oil	16 91	
41662—Loss, oil and barrel account, damage in transit, claim No. 6654	7 79	
41800—Car service balance, June, 1913	1 20	
41948—Oils	66 42	
42254—Oils	89 31	
42887—Car service balance, July, 1913	2 74	
42335—Oils, grease	306 39	
43547—Oils	130 59	
43722—Gasoline, oils	217 22	
42986—Car service balance	2 20	
		$3,596 67

IMPERIAL WASTE & METAL CO., MONTREAL, QUE.

39784—Cotton wipers	$37 65	
42189—Wool waste and cotton wipers	77 48	
38121—Cotton wipers	39 52	
		$154 65

IRISH & MAULSON, TORONTO, ONT.

37673—Extra premiums on policy No. 9765772	$81 45	
36610—Premium on policies, Norwich No. 5728824, Western No. 683538, Home No. 8184	18,051 35	

IRISH & MAULSON.—*Continued.*

38042—Extra premiums on policies, Norwich No. 5728824, Home No. 8184, Western 683538	$127 05	
40231—Extra premium on policy Nos. 572884-8184 and 683538	3 15	
39498—Amount of premiums and rebate endorsements, March and April, 1913	426 73	
41456—Extra premiums on policies, Norwich No. 5728824, Home 8184, Western 683538	31 72	
42678—Insurance extra premiums, policies Nos. 5728824-8184-683538	6 47	
		$18,727 92

THOMAS INGLIS, ENGLEHART, ONT.

40100—Ties	$125 40	
		$125 40

INTERNATIONAL & GREAT NORTHERN RAILROAD, PALESTINE, TEXAS.

37224—Car service balance, November, 1912	$1 05	
40435—Car repairs, July, 1912, bill No. 1640	6 45	
39316—Car service balance, March, 1913	9 00	
43292—Car repairs, bill No. 8470, March to July, 1913	2 66	
		$19 16

THE JOHN INGLIS CO., LTD., TORONTO, ONT.

43768—Tube sheet	$12 00	
		$12 00

THE IVES MODERN BEDSTEAD CO., LTD., MONTREAL, QUE.

38123—Mattresses	$29 50	
		$29 50

INTERNATIONAL RAILWAY PUBLISHING CO., MONTREAL, QUE.

36914—Advertisement in "Canadian Railway Official Guide," Nov., 1912, to Jan., 1913, inclusive	$17 50	
39642—Advertisement in "Canadian Railway Official Guide," February to April, 1913	17 50	
41699—Advertisement in "Canadian Railway Official Guide," May to July, 1913	17 50	
42810—Advertisement in "Canadian Railway Official Guide," August, 1913, to October, 1913	17 50	
		$70 00

IOWA CENTRAL RAILROAD, MINNEAPOLIS, MINN.

37448—Car repairs, September, audit No 68131	$0 27	
		$0 27

IDAHO & WASHINGTON NORTHERN R. R., SPIRIT LAKE, IDAHO.

37226—Car service balance, November, 1912	$1 05	
		$1 05

ILLINOIS NORTHERN RAILWAY, CHICAGO, ILL.

40948—Car repairs, No. 17453	$1 27	
		$1 27

THE IMPERIAL VARNISH & COLOR CO., TORONTO, ONT.

36757—Hot iron enamel	$18 20	
		$18 20

INTERNATIONAL SEAL & LOCK CO., HASTINGS, MICH.

40535—Seals embossed, T. & N. O. Ry.	$58 75	
		$58 75

IMPERIAL WIRE & CABLE CO., MONTREAL, QUE.

39385—No. 14 and No. 18 style wire	$103 35	
39230—No. 10 and 14 "adanac" R. C. & B. wire	34 76	
		$138 11

THE "INTELLIGENCER" PRINTING & PUBLISHING HOUSE, LTD., BELLEVILLE, ONT.

40897—Advertisement, Cobalt station grounds	$13 50	
		$13 50

IRON TRADE REVIEW, CLEVELAND, OHIO.

42110—Subscription to July 30th, 1914	$4 00	
43443—Subscription to August 1st, 1913	1 50	
		$5 50

INTERNATIONAL HARVESTER CO., CHICAGO, ILL.

39569—Refund of freight charges wrong delivery, Claim No. 5663	$1 77	
41562—Loss three sets of trees and yokes, Claim No. 6565	15 00	
		$16 77

AGENT, IROQUOIS FALLS STATION, ONT.

37871—Outstanding account, goods refused, Claim No. 6065	$5 70	
		$5 70

INTERNATIONAL BOTTLING WORKS, NORTH COBALT, ONT.

41791—Damage to empty bottles in transit, claim No. 6544	$4 63	
41540—Overcharge in weight, Claim No. 6735	4 08	
		$8 71

INDIANA HARBOR BELT RAILROAD, NEW YORK, N.Y.

43277—Car repairs, May to June, 1913	$3 05	
		$3 05

INDUSTRIAL WORKS, BAY CITY, MICH.

42196—Engine repair parts	$14 30	
		$14 30

INDIAN REFINING CO., INC., NEW YORK, N.Y.

42988—Car service balance, September, 1913	$ 77	
		$ 77

THE JACKSON PRESS, KINGSTON, ONT.

38125—Printing forms	$163 00
38609— " "	112 25
37590— " "	182 25
38302— " "	665 95
40355— " "	450 80
39708— " "	206 25
39786— " "	82 75
40761— " "	53 50
41049—Stationery	187 50
41056—Printing and stationery	415 50
41296—Stationery	10 00
41701—Forms	205 40
42191— "	36 50
42193— "	13 50
42257— "	189 48
41950— "	245 10

THE JACKSON PRESS.—*Continued.*

42124—Printing forms	$149 50	
42168— " "	148 50	
43467— "	74 00	
42888— " "	157 50	
43662— " "	333 61	
43770— " "	114 60	
		$4,197 44

JAMIESON MEAT CO., HAILEYBURY, ONT.

39521—Shortage one barrel fish, claim No. 5782	$13 30
37953—Supplies furnished boarding car, No. 60713	28 00
38015—Supplies furnished boarding car, No. 60713	5 18
37090—Supplies furnished, September to December, 1912 construction, Elk Lake Branch	66 62
37092—Supplies furnished, September 9th, November 11th and 27th	17 45
37398—Supplies furnished auxiliary car, September 9th, 1912	80
38755—Supplies furnished car 60713, December, 1912	15 69
37736—Loss three boxes butter, shortage, Claim No. 5853	49 50
39665—Loss 3½ lbs. macaroons, Claim No. 6381	70
39667—Shortage biscuits, Claim No. 6181	2 32
40295—Supplies furnished auxiliary car and engineers, January and February, 1913	17 90
40297—Supplies furnished surveying party, February, 1913	34 51
39194—Shortage on mutton, lost in transit, Claim No. 6305	5 20
39644—Supplies furnished, month of March, auxiliary car	9 67
40581—Refund of stop off charge, account stop off, Claim No. 6495	2 00
40548—Supplies furnished, March, 1913	44 10
40602—Supplies furnished auxiliary car, March, 1913	15 62
40666—Supplies furnished auxiliary car, May, 1913	29 79
41703—Supplies furnished surveying party, June, 1913	19 44
41705—Meats furnished as per statement, June 3rd to July 10th, 1913	328 22
41707—Meats furnished as per statement, June, 1913	58 69
41935—Meats furnished as per statement, June, 1913	26 64
41416—Overcharge in weight, hay and straw, Claim No. 6532	4 91
42427—Meats furnished, July, 1913	60 19
41894—Meats supplied as per statement	8 25
41952— " " "	6 50
41954— " " "	44 09
42112— " " "	54 25
42114— " " "	59 90
42116— " " "	33 26
42118— " " "	123 62
42120— " " "	35 23
42122— " " "	6 24
43045— " " "	62 73
43047— " " "	104 16
43049— " " "	28 06
43051— " " "	16 38
43053— " " "	13 14
43081— " " "	5 90
43181— " " "	38 02
43185— " " "	44 22
43187— " " "	37 93
43189— " " "	38 83
43191—Meats and groceries supplied as per statement	141 10
43379—Meats supplied as per statement	68 41
43445— " " "	21 21
42638— " " "	9 60
42640— " " "	2 50
43463— " " "	11 16
43465— " " "	58 34
42780— " " "	1 95
42782— " " "	30 00

JAMIESON MEAT CO.—*Continued.*

42784—Meats supplied as per statement	$1 35	
42886— " " "	7 05	
43160— " " "	46 35	
43162— " " "	28 17	
43330— " " "	122 34	
43332— " " "	141 10	
43404— " " "	20 43	
43406— " " "	20 90	
43512— " " "	59 22	
43514— " " "	88 96	
43564— " " "	44 05	
43664— " " "	35 85	
43666— " " "	66 90	
43668— " " "	35 28	
43772— " " "	59 70	
43774— " " "	68 25	
		$2,807 32

H. N. JOY, SOUTH PORCUPINE, ONT.

39887—Loss window glass and freight charges, claim No. 6158.	$10 59	
38978—Loss account damage to stove in transit, claim No. 6275	2 50	
		$13 09

F. JOSEPH, WAH TAY BEG, ONT.

42000—Ties	$17 03	
		$17 03

D. F. JONES MANUFACTURING CO., GANANOQUE, ONT.

38589—No. 2, Jones sockets shovels	$106 04	
37588—No. 2, Jones sockets shovels	40 53	
37912—No. 2, Jones sockets shovels	16 56	
40797—Scoops	39 75	
41937—Scoops	20 37	
41896—No. 2, Jones shovels	19 86	
		$243 11

JAMES & REID CO., PERTH, ONT.

39387—Office stool	$1 00	
41298—Office stool	1 00	
		$2 00

D. JOHNSON, MATHESON, ONT.

40392—Donation *re* cow alleged killed, Matheson, May 27th, 1913.	$20 00	
		$20 00

JAMIESON LIME CO., RENFREW, ONT.

41187—Lime	$25 00	
		$25 00

C. JAMES, WAH TAY BEG, ONT.

40467—Ties	$222 72	
		$222 72

R. JARVIS, McCOOL P.O., ONT.

40100—Ties	$28 02	
		$28 02

A. B. Jardine & Co., Hespeler, Ont.

40353—Tube rollers	$20 50	
		$20 50

Journal Printing Co., Ltd., Ottawa, Ont.

40899—Advertisement, Cobalt station grounds	$25 50	
		$25 50

Joseph & Khoury, Cobalt, Ont.

37861—Loss one gallon syrup, Claim No. 5908	$1 00	
41692—Cream supplied car "Sir James," June 5th, 1913	1 70	
		$2 70

Jonesboro, Lake City and Eastern Railway, Jonesboro, Ark.

40772—Car service balance, April, 1913	$1 35	
42033—Car service balance, May, 1913	2 25	
		$3 60

Mrs. H. Joanesse, Cobalt, Ont.

39731—Shortage one box dry goods, claim No. 5394	$53 45	
		$53 45

A. S. Jennings & Co., Toronto, Ont.

40549—Flowers for Englehart Greenhouse	$8 60	
		$8 60

Jamieson & Willows, Elk Lake, Ont.

39500—Teaming, March and January, 1913	$79 20	
40394—Team hire, April, 1913	36 00	
		$115 20

Campbell & Johnston, Charlton, Ont.

40100—Ties	$208 86	
		$208 86

E. Joseph, Cochrane, Ont.

42530—Settlement claim No. 7190, loss confectionery in transit.	$7 26	
		$7 26

H. Jack, Heaslip, Ont.

36650—Ties	$17 00	
		$17 00

E. James, Earlton, Ont.

42000—Switch sets	$44 79	
		$44 79

Rebecca Kennedy, North Bay, Ont.

37675—Laundry, month of October and November, 1912	$21 96	
36744—Washing towels, month of December, 1912	9 09	
38757—Washing towels, month of January, 1913	10 35	
39503—Towels and aprons washed, February, 1913	8 97	
39044—Towels washed, month of March, 1913	8 22	
40485—Towels washed, month of April, 1913	8 76	
40436—Laundry, May, 1913, washing towels	8 77	
41541—Laundry, June, 1913, washing towels	7 23	

REBECCA KENNEDY.—*Continued.*

41632—Towels washed, July, 1913	$9 54	
42787—Towels washed, month of August, 1913	10 77	
42834—Laundry work performed, month of September, 1913	17 49	
		$121 15

G. KERSEY, FREIGHT CHECKER, NORTH BAY, ONT.

39830—Travelling expenses, April, 1913	$12 00	
42024—Travelling expenses, July, 1913	14 00	
43580—Travelling expenses, October, 1913	14 00	
		$40 00

KEYSTONE COAL AND COKE RAILWAY, GREENSBURG, PA.

39320—Car service balance, March, 1913	$1 54	
38311—Car service balance, October, 1913	1 03	
		$2 57

CHAS. H. KERR, THORNLOE, ONT.

37716—Overcharge in rate on potatoes, claim No. 5812	$20 52	
		$20 52

F. H. KENNY, CHARLTON, ONT.

40100—Ties	$144 66	
		$144 66

D. KORMAN, ENGLEHART, ONT.

39765—Bread	$1 50	
41566—Refund, account bona fide fire sufferer, Englehart fire, claim No. 7158	24 00	
42625—Supplies furnished auxiliary cars, May and June, 1913	11 15	
		$36 65

G. F. KRICK, UNO PARK, ONT.

42000—Fence posts	$11 90	
		$11 90

KANSAS CITY SOUTHERN RAILWAY, KANSAS CITY, MO.

38309—Car service balance, October, 1912	$8 40	
39055—Car repairs, October, 1912, bill No. 15124	45	
39179—Car service balance, December, 1912	1 65	
40070—Car repairs, audit bill No. 18093	30	
40774—Car service balance, April, 1913	2 70	
41802—Car service balance, June, 1913	4 95	
42889—Car service balance, July, 1913	4 00	
42354—Car repairs, bill No. 21955	3 69	
		$26 14

W. R. KEYS, RESIDENT ENGINEER, NORTH BAY.

39093—Expenses, October and December, 1912	$27 90	
40013—Expenses, February, 1913	21 63	
39232—Expenses, March and April, 1913	27 05	
		$76 58

KANAWKA & MICHIGAN RAILWAY, COLUMBUS, OHIO.

38600—Car service balance, January, 1913	$9 45	
39318—Car service balance, March, 1913	6 75	
40776—Car service balance, April, 1913	8 55	
42891—Car service balance, July, 1913	45	
		$25 20

KEUFFEL & ESSER CO., MONTREAL, QUE.

38927—Repairing and express charges on transit	$23 55	
38304—Hand level	4 12	
38344—Hand levels	8 14	
		$35 81

W. R. KELLY, SUPERVISOR TELEGRAPH LINES, NORTH BAY, ONT.

37835—Travelling expenses, November, 1912	$8 75	
36872— " December, 1912	6 85	
38957— " January, 1913	8 95	
37988— " February, 1912	5 10	
40011— " March, 1913	7 10	
39828— " April, 1913	11 75	
41095— " May, 1913	11 85	
41238— " June, 1913	22 60	
42022— " July, 1913	8 95	
42290— " August, 1913	7 30	
		$99 20

D. KERRIGAN, LANDSCAPE GARDENER, ENGLEHART, ONT.

37837—Travelling expenses, November, 1912	$10 15	
36916— " December, 1912	9 45	
38823— " January, 1913	4 00	
37986— " February, 1913	3 00	
40015— " March, 1913	2 75	
40220— " May, 1913	11 23	
41240— " June, 1913	4 00	
42389— " July, 1913	12 60	
42559— " August, 1913	8 00	
43579— " September, 1913	6 65	
		$71 83

KENNEDY BROS., UTICA, N.Y.

37594—Memo. books	$3 00	
38306—Memo. books	8 00	
39788—Memo. books	1 00	
41051—K. P. memo.	1 00	
41058—Inserts	3 00	
42195—Memo. books	2 00	
43337—Memo. books	2 00	
43670—Memo. books	1 00	
		$21 00

H. KRUG FURNITURE CO., LTD., BERLIN, ONT.

39389—Office chairs	$10 45	
37592—Office chairs	9 05	
		$19 50

KALAMAZOO RAILWAY SUPPLY CO., KALAMAZOO, MICH.

42445—Push cars	$123 00	
42198—Push cars	123 00	
		$246 00

KNIGHT BROS. & MCKINNON, LTD., COBALT, ONT.

40499—For credit allowed on B/C 16049, for ties supplied for construction of siding	$74 88	
42505—Refund account, siding agreement, Porcupine and South Porcupine	86 00	
		$160 88

R. C. Kerr, Earlton, Ont.

38885—Teaming	$16 00	
40396—Board supplied and livery, April and May, 1913	28 00	
40668—Board supplied, April, 1913	12 50	
41346—Board supplied, June, 1913	9 00	
		$65 50

Wm. Kay, Master Mechanic's Dept., North Bay, Ont.

38955—Expenses, January, 1913	$0 35	
		$0 35

J. G. G. Kerry, Consulting Engineer, Toronto, Ont.

37485—Salary as consulting engineer, November, 1912	$83 33	
36556— " " December, 1912	83 33	
38651— " " January, 1913	83 33	
37876— " " February, 1913	83 33	
39833— " " March, 1913	83 33	
39096— " " April, 1913	83 33	
40114— " " May, 1913	83 33	
41405— " " June, 1913	83 33	
41440— " " July, 1913	83 33	
42591— " " August, 1913	83 33	
42606— " " September, 1913	83 33	
" " October, 1913	83 33	
		$999.96

Kewaunee, Green Bay & Western Railroad, Green Bay, Wis.

37228—Car service balance, November, 1912	$3 85	
		$3 85

Kansas City, Mexico & Orient Railway, Kansas City, Mo.

40876—Car repairs, bill No. R1919	$0 48	
41804—Car service balance, December, 1911	1 05	
43279—Car repairs, April, 1913, bill No. 4955	10 33	
43294—Car repairs, bill B5209	1 64	
		$13 50

G. H. Kingston, Heaslip, Ont.

36714—Team hire	$7 50	
		$7 50

The Knight Brothers Co., Ltd., Burk's Falls, Ont.

37677—Siding rebate, June 14th to October 28th, 1912	$69 83	
39889—Siding rebate, October 28th to February 17th, 1913	60 00	
37774—Siding rebate, June 14th to October 28th, 1912, Cochrane	88 00	
		$217 83

Claude Kennedy, Englehart, Ont.

37400—Supplies furnished car "Temagami," Commission's monthly inspection trip, May, 1912	$4 80	
		$4 80

King Edward Messenger Service, Toronto, Ont.

41496—Messenger service, August, 1913	$2 70	
		$2 70

A. Kruger, Krugerdorf, Ont.

41511—Ties	$34 63	
42000—Ties	11 54	
		$46 17

OTTO W. KNAPP, HAILEYBURY, ONT.

41542—Loss, shortage, one case whiskey, claim No. 7035	$6 60	
41564—Loss, whiskey bottles broken, claim No. 7038	2 00	
42503—Loss, three bottles whiskey broken in transit, claim No. 7033	2 50	
42532—Loss account, damage to whiskey in transit, claim No. 7039	3 75	
		$14 85

H. KIDEKEL.

42789—Unclaimed wages	$11 37	
		$11 37

J. H. KERR, HEASLIP, ONT.

42720—Overcharged in weight, hay, claim No. 6868	$4 92	
		$4 92

KNECHTEL FURNITURE CO., HANOVER, ONT.

42786—Furniture	$29 00	
		$29 00

LEHIGH VALLEY RAILROAD, PHILADELPHIA, PA.

38313—Car service balance, October, 1912	$129 47	
38403—Ticket balance, October, 1912	43 22	
38453—Car repairs, bill No. 46868	6 84	
37230—Car service balance, November, 1912	163 70	
37328—Ticket balance, November, 1912	64 12	
37452—Car repairs, bill No. 48775	15 60	
38887—Car repairs, September and October, 1912, bill No. 50851.	64	
39181—Car service balance, December, 1912	164 50	
39271—Ticket balance, December, 1912	94 49	
38476—Car repairs, bill No. 52869	2 44	
38602—Car service balance, January, 1913	114 90	
39322—Car service balance, March, 1913	201 65	
40587—Overcharge advances, silver ore, claim No. 6510	1 00	
41269—Car repairs, February and March, 1913, bill No. 58824	3 67	
40778—Car service balance, April, 1913	51 75	
42035—Car service balance, May, 1913	48 60	
41806—Car service balance, June, 1913	5 35	
42893—Car service balance, July, 1913	28 35	
43221—Car repairs, bill No. 66751	1 87	
42538—Overcharge in rate, ore sacks, claim No. 6096	4 14	
42990—Car service balance, August, 1913	43 15	
43296—Car repairs, bill No. 68854	5 45	
		$1,194 90

LAKE SHORE & MICHIGAN SOUTHERN RAILROAD, CLEVELAND, OHIO.

38455—Car repairs, bill No. 66725	$7 05	
37454—Car repairs, August, September, bill No. 69095	8 65	
38478—Car repairs, bill No. 72337, shop account 1059-11	3 56	
38704—Ticket balance, January, 1913	5 13	
40437—Car repairs, June, May, October, November, December, 1912	30 07	
40076—Car repairs, bill No. 80491	25 28	
41273—Car repairs, January and February, 1913, bill No. 84737	11 35	
42137—Car repairs, bill No. 90319	13 55	
42139—Car repairs, bill No. 91305	30 18	
42362—Car repairs, bill No. 93329	12 38	
43466—Car repairs, bill No. 97035	12 08	
		$159 28

GEO. W. LEE, GENERAL AGENT, NORTH BAY, ONT.

38229—Travelling expenses, November, 1912	$9 00	
38825—Travelling expenses, January, 1913	13 50	
37992—Travelling expenses, February, 1913	8 75	
39645—Purchase N. ½, Lot. 4, Con. 5, Lamarche, 4.6 acres	100 00	
40019—Travelling expenses, March, 1913	9 00	
39142—Travelling expenses, April, 1913	17 50	
40218—Travelling expenses, May, 1913	6 40	
40398—Donation *re* accident, alleged injuries to Wm. Gamble, October, 1911	101 50	
41529—Donation relief, losses by forest fires, to needy settlers	100 00	
41709—Travelling expenses, June, 1913	11 50	
42369—Travelling expenses, July, 1913	12 45	
42292—Travelling expenses, month of August, 1913	33 45	
43599—Expenses, September, 1913	5 75	
43584—Expenses, October, 1913	5 95	
		$434 75

LINDSAY & MCCLUSKEY, NORTH BAY, ONT.

38129—Fireclay	$27 75	
40357—Fireclay	7 50	
43551—Lime	4 00	
43412—Lime	3 20	
43776—Lime	5 60	
		$48 05

F. LABELLE, WAH-TAY-BEG, ONT.

40100—Ties	$49 56	
		$49 56

HENRY LENG, NEW LISKEARD, ONT.

39693—For lots 1 and 2, Block L, Plan M 61, Town of New Liskeard	$1,500 00	
		$1,500 00

S. LEGER, COCHRANE, ONT.

39895—½ bbl. molasses and freight charges, claim No. 5945	$15 09	
41419—Loss one barrel salt, corned beef and tobacco, claim No. 6486	42 47	
		$57 56

LONDON AND PETROLEA BARREL CO., LONDON, ONT.

39600—Water kegs	$16 20	
		$16 20

THE LIGHTNING POLISH COMPANY, PETOLEA, ONT.

39876—Metal polish	$14 40	
41140—Metal polish	19 20	
42199—Metal polish	19 20	
43549—Metal polish	19 20	
		$72 00

LUNDY SHOVEL AND TOOL CO., PETERBOROUGH, ONT.

39505—Coal scoops	$39 11	
		$39 11

LONDON FREE PRESS PRINTING CO., LONDON, ONT.

40901—Advertisement, Cobalt station grounds	$30 60	
		$30 60

LAMBTON CREAMERY COMPANY, PETROLEA, ONT.

41142—Butter	$59 63	
41272—Butter	11 93	
41939—Butter	35 78	
42197—Butter	83 48	
42429—Butter	11 70	
42200—Butter	22 95	
43131—Butter	57 38	
43341—Butter	92 48	
43527—Butter	58 27	
43553—Butter	81 90	
43410—Butter	88 20	
43676—Butter	37 80	
		$641 50

LADY MINTO HOSPITAL, NEW LISKEARD, ONT.

37955—Treatment and use of operating-room, E. Dorey, Sept. 24th	$23 00	
36708—Treatment *re* alleged injuries, W. Millar, Sept. 5th, 1912.	20 00	
40235—Services *re* alleged fatal injury to Brakeman L. G. Faught, March 1st, 1913	6 25	
40237—Services rendered Joseph McCann, Feb. 13th, 1913	16 58	
41516—Services rendered M. Sammon, June 19th, 1913	23 75	
		$89 58

R. E. LALONDE, TORONTO, ONT.

39891—Four bottles wine broken in transit, claim No. 6192....	$1 50	
		$1 50

LANGHAM COBALT MINES, LTD., TORONTO, ONT.

37777—Rent of building on Langham property, Elk Lake Branch, September-October, 1912	$30 00	
36748—Rent of building on Langham property, Elk Lake Branch, November-December, 1912	30 00	
38611—Rent of building on Langham property, Elk Lake Branch, January, 1913	15 00	
		$75 00

LOUISVILLE AND NASHVILLE RAILROAD, LOUISVILLE, KENTUCKY.

36632—Car repairs, February, 1912, bill 22717	$6 23	
38315—Car service, balance, October, 1912	17 15	
37232—Car service, balance, November, 1912	12 95	
37456—Car repairs, September, bill No. 35990	0 35	
39057—Value of body of L. & N. box car No. 92517, destroyed on T. & N. O., August 8th, 1912	257 66	
38502—Car repairs, Nos. 39674-41443	78 39	
38604—Car service, balance, January, 1913	4 50	
39324—Car service, balance, March, 1913	34 85	
40078—Car repairs, bill No. 43418	11 95	
41271—Car repairs, November, 1912, bill No. 45556	3 56	
40878—Car repairs, November 29th, 1912, and February 4th, 1913	1 39	
42037—Car service, balance, May, 1913	16 65	
42356—Car repairs, bill No. 61673	1 33	
43281—Car repairs, December, 1912; April and June, 1913	10 89	
		$457 85

LEHIGH AND NEW ENGLAND RAILROAD, PHILADELPHIA, PA.

38317—Car service, balance, October, 1912	$6 30	
37234—Car service, balance, November, 1912	4 20	
39183—Car service, balance, December, 1912	1 05	
38606—Car service, balance, January, 1913	3 15	
41810—Car service, balance, June, 1913	13 05	
42895—Car service, balance, July, 1913	2 70	
43283—Car repairs, April, 1913	1 98	
		$32 43

LAKE SIMCOE ICE SUPPLY CO., LTD., TORONTO, ONT.

36716—Ice supplied Sept. 1st to Nov. 30th, and Dec. 1st to 31st, 1912	$9 00	
37840—Ice supplied January 1st, 1913-February 28th, 1913	4 50	
39646—Ice supplied, March 1st, 1913-April 30th, 1913	4 50	
41004—Ice supplied, May 1st, 1913-June 30th, 1913	4 50	
41478—Ice supplied, July 1st, 1913-July 31st, 1913	2 25	
42627—Ice supplied, August 1st, 1913-August 31st, 1913	2 25	
42680—Ice supplied, September 1st, 1913-September 30th, 1913	2 25	
		$29 25

LAKE ERIE AND WESTERN RAILROAD, INDIANAPOLIS, IND.

37024—Car repairs, July, 1912, bill No. 49374	$1 20	
43348—Car repairs, bill No. 59587	11 48	
		$12 68

LIBRARY BUREAU OF CANADA, LTD., TORONTO.

38613—Manilla folders	$1 20	
37842—Correspondence folders	1 20	
39767—Transfer cases and folders	32 10	
40299—White cards	0 36	
39648—Manilla folders and white cards	2 28	
40550—White cards	1 26	
41749—Card cabinet and stationery	12 35	
41751—Transfer cases	21 60	
41857—Pressboard folders	7 50	
41602—White cards	0 90	
43076—Manilla folders	1 80	
43226—Manilla folders	8 40	
		$90 95

LUDOWICI, CELADON CO., CHICAGO, ILL.

41060—Roof tiles	$7 92	
		$7 92

J. H. LENG, NEW LISKEARD, ONT.

39691—For lots 1 and 2, Block L, Plan M 61, Town of New Liskeard	$3,000 00	
		$3,000 00

CHAS. LA PONTE, NORTH COBALT, ONT.

41393—Loss on meat account, bad order, claim No. 6614	$3 00	
42507—Shortage one case dry goods in transit	23 25	
		$26 25

D. LEGAULT, CHARLTON, ONT.

38882—Overcharge in weight, claim No. 6345	$1 28	
40585—Overcharge in weight, claim No. 6344	7 39	
		$8 67

MRS. A. LEGAULT, GLEN RIVER, ONT.

39893—Shortage one mattress, claim No. 6355	$5 00	
		$5 00

R. J. LOVELL COMPANY, LTD., TORONTO, ONT.

38076—Oil and waste books	$62 91	
38131—Order books	17 85	
		$80 76

TOWN OF LATCHFORD, ONT.

40104—Donation towards general purposes, town of Latchford, year 1912	$200 00	
		$200 00

TOWN OF LISKEARD, ONT.

39504—Rental of sewer, New Liskeard, for 1912, at Whitewood av.	$34 68	
		$34 68

JOHN M. LYLE, TORONTO, ONT.

37697—Services rendered, inspection Matheson station (final)..	$402 01	
		$402 01

SAM LOISEL, SOUTH PORCUPINE, ONT.

37990—Expenses, February, 1913	$3 60	
37839—Expenses, November, 1912	3 95	
38959—Expenses, December, 1912	8 05	
40021—Expenses, March, 1913	2 90	
39832—Expenses, April, 1913	3 20	
41097—Expenses, May, 1913	5 20	
42355—Expenses, June, 1913	6 30	
42028—Expenses, July, 1913	10 65	
42294—Expenses, August, 1913	6 15	
43114—Expenses, September, 1913	6 50	
		$56 50

AGENT AT LATCHFORD STATION, ONT.

36918—Groceries purchased from R. H. Brown & Co., for car "Sir James"	$1 75	
38768—Outstanding account, shortage claim No. 6272	89	
40146—Outstanding account, shortage, 6 cases canned goods, claim No. 6492	1 33	
42742—Outstanding account, goods short, claim No. 7098	1 40	
41074—Hardwood received from W. H. McGrutcher, Widdifield, Ont.	11 25	
		$16 62

DEXTER P. LILLIE CO., INDIAN ORCHARD, MASS.

37596—Machined colored waste	$156 08	
39391— " "	156 41	
38146— " "	159 57	
39598— " "	169 34	
41189— " "	169 38	
41956— " "	113 04	
43343— " "	112 46	
		$1,036 28

F. W. LOVE, THORNLOE, ONT.

40020—Switch sets	$134 38	
42000—Switch sets	44 80	
		$179 18

LOUISIANA RAILWAY AND NAVIGATION CO., SHREVEPORT, LA.

40880—Car repairs, bill No. 24119	$3 58	
41631—Car repairs, bill No. 24483	1 98	
41808—Car service, balance, June, 1913	1 80	
42358—Car repairs, bill No. 24963	2 48	
		$9 84

P. J. Lafleur, Earlton, Ont.

38163—Ties and fence posts	$26 11	
39461—Timber	19 97	
40233—Timber	339 29	
39234—Timber	64 16	
40100*a*—Switch sets	335 96	
40100*a*—Switch sets	89 60	
41293—Timber	111 99	
41971—Ties	11 70	
42000—Telephone poles and fence posts	37 33	
		$1,036 11

Long Island Railroad Co., Philadelphia, Pa.

42360—Car repairs, bill 2-1054	$1 91	
		$1 91

The Lunkenheimer Co., Cincinnati, Ohio.

41274—Valves	$81 40	
		$81 40

R. L. Lamb, Chief Despatcher, North Bay, Ont.

36692—Expenses, November and December, 1912	$14 15	
39144—Expenses, April, 1913	17 00	
42026—Expenses, June and July, 1913	5 00	
43582—Expenses, September, 1913	8 60	
		$44 75

David Little, Steam Shovel Foreman, Englehart, Ont.

40017—Expenses, December, 1912	$3 50	
		$3 50

John Leigh, North Bay, Ont.

41724—Donation to fund, benefit Geo. Coombs, alleged permanently injured, legs amputated, run over by train, Cobalt, August 20th, 1913	$50 00	
		$50 00

J. J. LaPalm, Nushka, Ont.

38565—Ties	$126 39	
39589—Ties	50 88	
40098—Ties	39 63	
		$216 90

R. Lockhart, Wah-Tay-Beg, Ont.

40100—Ties	$22 05	
		$22 05

E. Leonard & Sons, London, Ont.

36746—Two sets of grate bars for 34" upright boiler	$10 85	
43672—Repair parts	70 88	
		$81 73

R. Laidlaw Lumber Co., Ltd., Toronto, Ont.

38127—Lumber	$52 00	
38044—Lumber	205 07	
39594—Pine	371 16	
41300—Lumber	999 07	
42788—Lumber	108 00	
		$1,735 30

E. Laflamme, North Cobalt, Ont.

38982—Overcharge in weight and rate, claim No. 6069	$26 45	
37523—Overcharge in weight, beer, claim No. 5759	5 20	
		$31 65

Lanthier, Freres, Cobalt, Ont.

43083—Supplies furnished car "Abitibi"	$1 30	
		$1 30

Loney & Co., North Bay, Ont.

43674—Groceries	$5 56	
		$5 56

La Rose Mines, Ltd., Cobalt, Ont.

37611—Rebate, siding agreement, claim No. 5917	$8 00	
37863—Rebate, siding agreement, claim No. 6026	6 00	
37738—Siding Rebate, Lawson siding, October, 1912, Claim 6137	10 00	
38980—Loss on silver ore, shortage in transit, Claim No. 4877	12 67	
39196—Siding rebate, Lawson siding, Feb., 1913, Claim No. 6590	26 00	
39198—Siding rebate, Princess siding, March, 1913, claim 6723	56 00	
40589—Siding rebate, Princess siding, November, December, 1912, January, February, 1913	178 00	
40591—Siding rebate, Lawson siding, November, December, 1912, January, March, 1913	42 00	
40168—Siding rebate, Lawson siding, April, 1913	7 59	
40170—Siding rebate, Princess siding, December, 1912	80 00	
41357—Siding rebate, Princess siding, November, 1912	14 00	
41420—Siding rebate, Princess siding, May and June, 1913	120 00	
42509—Siding rebate, Princess siding, July, 1913	58 00	
		$618 26

W. R. Lowery, Cobalt, Ont.

36792—Loss syrup account, damage claim, No. 5765	$1 90	
41418—Loss syrup in transit, claim 6806	4 70	
42665—Loss account, two jars strawberry syrup, broken in transit, claim No. 7009	4 00	
42667—Loss one gallon jar pineapple syrup, broken in transit, claim, No. 6891	2 00	
42534—Damage to chocolates, with connections, claim No. 6885.	2 93	
42536—Loss tobacco, pilfered by connections, claim No. 6279	1 58	
		$17 11

W. Laws, Earlton, Ont.

38565—Ties	$11 07	
		$11 07

T. H. Leverton, Hillview, Ont.

39573—Damage to suit case en route to New Liskeard, Claim No. 6230	$2 50	
		$2 50

Laing & Mackee, North Bay, Ont.

39596—Mattresses	$45 00	
42661—Loss account, damage to rug and pillows, by acid	2 05	
43339—Mattresses, shades, blankets, etc.	49 65	
43408—Mattresses	75 00	
		$171 70

J. M. Lavoire, Cobalt, Ont.

40018—Ties	$1,672 53	
		$1,672 53

Lucky Cross Mines of Swastika, Ltd.

38759—Refund of balance, amount deposited for siding construction	$19 64	
40148—Siding rebate, September, 1912, to March 29th, 1913	68 00	
		$87 64

Robt. Lillie, North Bay, Ont.

39571—Overcharge in weight, heaters, claim, No. 6162	$2 80	
41433—Loss one camp stove, claim No. 6168	4 50	
		$7 30

Chas. La Plante, Nushka, Ont.

40465—Ties	$436 86	
40467—Ties	129 69	
40098—Ties	158 82	
		$725 37

Frederick Lake, Iroquois Falls, Ont.

40016—Ties	$46 26	
		$46 26

Lake Superior and Ishpeming Railway, Cleveland, Ohio.

40072—Car repairs, audit No. 216	$1 43	
		$1 43

Lake Superior Terminal and Transfer Co., St. Paul, Minn.

40074—Car repairs, audit No. 10042	$ 33	
		$ 33

F. Ludford, Iroquois Falls, Ont.

41293—Ties	$16 83	
41971—Ties	5 61	
		$22 44

F. Leslie, Haileybury, Ont.

41012—Refund amount deducted from wages, October, 1909	$9 74	
		$9 74

S. Labreche, Nushka, Ont.

40098—Ties	$82 86	
		$82 86

J. A. LaLonde, Cobalt, Ont.

41355—Loss account shortage, biscuits, claim, No. 5617	$2 36	
		$2 36

Lewis Brothers, Montreal, Que.

41406—Loss account, shortage, iron, claim No. 6068	$7 00	
		$7 00

"Mail" Printing Co., Toronto, Ont.

37601—Subscription, *Mail and Empire*, one year, November 29th 1912, to December 1st, 1913	$4 00	
40903—Advertisement, Cobalt station grounds	27 30	
		$31 30

JAS. B. MITCHELL, KELSO, ONT.

38163—Ties	$13 68	
39461—Ties	212 70	
		$226 38

MACKENZIE & CO., OTTAWA, ONT.

36838—Framing photographs	$4 50	
37844—Mounting and framing one address	6 25	
40865—Framing picture	75	
		$11 50

MARTIN SENOUR CO., LTD., MONTREAL, QUE.

38135—Paint	$92 50	
40282—Paint	38 71	
		$131 21

MORGAN'S LOUISIANA & TEXAS RAILROAD & STEAMSHIP CO., NEW ORLEANS, LA.

38482—Car repairs, audit No. 10196, January, 1913	$2 35	
40956—Car repairs, Bill No. 12032	16 86	
42364—Car repairs, Bill No. 12852	83	
		$20 04

S. J. MAJOR, LTD., OTTAWA, ONT.

41359—Refund of demurrage charges, assessed in error	$13 00	
		$13 00

A. P. MORISETTE, CONSTABLE, COBALT, ONT.

41941—Uniform	$27 00	
		$27 00

G. T. MOORE, NORTH BAY, ONT.

37936—Ice supplied, cleaning and levelling ice house	$2,430 00	
		$2,430 00

R. L. MALKIN, NELLIE LAKE, ONT.

40465—Ties	$1,281 96	
40469—Switch sets	134 39	
40014—Ties	557 46	
40418— "	100 80	
41293— "	776 28	
41511— "	300 09	
41511— "	44 79	
41511— "	33 60	
41971— "	107 82	
43103*a*— "	37 59	
43103*a*—Switch sets	144 09	
43240*a*—Ties	135 63	
43240*a*—Switch sets	256 02	
43240*a*—Ties	45 20	
43240*a*—Switch sets	148 78	
43240*a*—Ties	18 90	
43240*a*—Ties	48 03	
		$4,171 43

JAMES MORRISON BRASS MANUFACTURING CO., LTD., TORONTO, ONT.

38141—Water gauge pig lead	$49 38
37608—Screws, hooks and discs	49 91
39399—Gauges	8 48
39513—Gauges, discs	11 94
38152—Discs, injectors, pipe fittings, etc.	89 47

JAMES MORRISON BRASS MANUFACTURING CO.—*Continued.*

40365—Fittings, valves and steam gauges	$30 92	
39710—Valves	65 45	
39878—Pipe fittings	17 35	
40937—Pipe fittings	46 49	
41278—Pipe fittings	121 80	
42209—Pipe fittings	8 10	
42579—Refinishing railing work on outside of car "Sir James" and bronze plating to sample	50 00	
42202—Valves	84 38	
42204—Pipe fittings	34 08	
43383—Pipe fittings	6 48	
43416—Repair parts	11 85	
		$686 08

JOHN MORROW SCREW CO., LTD., INGERSOLL, ONT.

39395—Set screws	$0 48	
40363—Thumb screws	4 17	
42201—Cap screws	15 90	
41958—Cap screws	3 46	
		$24 01

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE RAILWAY, MINNEAPOLIS, MINN.

38319—Car service balance, October, 1912	$8 05	
38515—Car repairs, bills No. 808-837, September, 1912	36 44	
37030—Car repairs, September, 1912, audit No. 1247	4 29	
37236—Car service balance, November, 1912	15 05	
39065—Car repairs, October, 1912	88	
38504—Car repairs, Nos. 979, 1301, 1120	7 32	
38608—Car service balance, January, 1913	17 65	
40080—Car repairs, audit Nos. 783, 1133, February	6 73	
40172—Overcharge in rate, silver ore, claim No. 6550	7 17	
40952—Car repairs, March, 1913, No. 935	11 95	
40954—Car repairs, April, 1913, No. 2347	20 09	
41637—Car repairs, December 16th, 1912, to April 14th, 1913	36 23	
41864—Ticket balance, June, 1913	2 85	
42370—Car repairs, bill No. 2328	22 18	
42372—Car repairs, bill No. 1129	4 08	
43223—Car repairs, bill No. 2263	6 49	
43287—Car repairs, bill No. 853	15 86	
43050—Ticket balance, August, 1913	16 00	
43470—Car repairs, bill No. 419	1 54	
43472—Car repairs, bills Nos. 786-1862	16 77	
		$257 62

MICHIGAN CENTRAL RAILROAD, DETROIT, MICH.

37613—Overcharge in rate on silver ore, No. 3483	$1 07	
38517—Car repairs, October 15th and 16th, bill No. 10291-11358	24 09	
37028—Car repairs, July and September, 1912, No. 11489	12 05	
39061—Car repairs, bill No. 13593	1 20	
39063—Car repairs, bill No. 12981	4 36	
40150—Overcharge in rate, canned goods, claim No. 6696	15 37	
41275—Car repairs, November, 1912, to January, 1913, No. 3211	7 68	
40884—Car repairs, December 30th, 1912, and February 14th, 1913	31	
41635—Car repairs bill No. 5467	6 47	
41570—Overcharge on canned goods, claim No. 6914	3 25	
42368—Car repairs, bill No. 7161	6 38	
43225—Car repairs, bills 8729-8528	15 68	
43285—Car repairs, May, 1913, bill No. 8273	3 67	
43468—Car repairs, July and August, bills Nos. 9695-8781	16 07	
		$117 65

MISSOURI PACIFIC RAILWAY, ST. LOUIS, MO.

38321—Car service balance, October, 1912	$12 60	
38513—Car repairs, bill No U17478-17738	3 54	
37458— " September, 1912, bill No. U19808	30	
39059— " August and October, 1912	4 08	
40441— " December, 1912, January, 1913, bill No. 25713	1 10	
39994— " January and February, 1913, bill U28246	13 30	
41277— " May and June, 1912, February and March, 1913, No. 23740-30324	6 77	
40780—Car service balance, April, 1913	30 15	
40950—Car repairs, April 1st, to April 13th, 1913	2 12	
42145— " bill U36684	13 71	
42376— " bill U39376	21 22	
43227— " bill U42429	14 52	
43474— " bill U44629	6 24	
		$129 65

MILLER CHEMICAL ENGINE CO., CHICAGO, ILL.

43724—Springs	$17 00	
		$17 00

MINES CHEMICAL SUPPLY CO., LTD., COBALT, ONT.

37865—Settlement of claim No. 6029	$7 32	
		$7 32

MEAKINS & SONS, LTD., HAMILTON, ONT.

38137—Brushes	$32 00	
38591—Switch brooms and brushes	102 33	
37600—Dusters and whisks	39 27	
37914—Steel wire switch broom	23 52	
39507—Brushes, lettering pencils	5 20	
40145—Brushes	81 98	
39046—Whitewash brushes	19 60	
40284—Brushes	82 45	
41859— "	9 80	
42303— "	30 01	
43336— "	38 12	
		$464 28

E. MONTFORT, NORTH COBALT, ONT.

39711—Loss, milk, claim No. 6021	$4 10	
		$4 10

MONTGOMERY & FERGUSON, HAILEYBURY, ONT.

39899—Damage to stove, claim No. 6057	$3 50	
		$3 50

MONONGAHELA RIVER CONSOLIDATED COAL & COKE CO., PITTSBURG, PA.

39669—Overcharge in rate, coal, claim No. 5695	$24 04	
		$24 04

MAGLADERY BROTHERS CO., LTD., NEW LISKEARD, ONT.

37718—Damage to shells by wet, claim No. 6044	$1 40	
37720—Cost of repolishing 6 stoves damaged in transit, claim No. 6045	2 00	
38746—Settlement of claim, No. 6038	75	
39905—Four hods broken between terminals, claim No. 6055	1 52	
39907—Loss 20 lamp glasses on account of damage, claim No. 6303	1 00	
40305—Stove and pipes	5 55	
		$12 22

F. J. Martyn, North Bay, Ont.

40438—Undertaking *re* L. G. Faught, deceased	$15 00	
41623—Ambulance *re* alleged injury, Olen Kexrisne	3 00	
		$18 00

Montreal Cotton & Wool Waste Co., Ltd., Montreal, Que.

37602—Wool Waste	$206 58	
39397— " "	210 87	
39511— " "	191 72	
40359— " "	183 74	
39790— " "	208 48	
40941— " "	182 64	
41276— " "	208 98	
42207— " "	133 27	
42206— " "	206 18	
43166— " "	146 83	
		$1,879 29

Mobile & Ohio Railroad, Mobile, Ala.

37032—Repairs to cars, September, 1912, No. 453	$1 80	
37244—Car service balance, November, 1912	19 95	
39191— " " December, 1912	5 95	
38616— " " January, 1913	12 60	
39332— " " March, 1913	13 60	
40246—Car repairs bill, No. 496	1 12	
40788—Car service balance, April, 1913	2 70	
40958—Car repairs, January and March, 1913	1 01	
41816—Car service balance, June, 1913	9 45	
42901—Car service balance, July, 1913	12 15	
42374—Car repairs, bill No. 404	8 03	
		$88 36

Montour Railroad, Pittsburg, Pa.

38325—Car service balance, October, 1912	$0 70	
37240— " " November, 1912	3 25	
39187— " " December, 1912	70	
38612— " " January, 1913	5 85	
39328— " " March, 1913	20 10	
40784— " " April, 1913	6 75	
42039— " " May, 1913	45	
41812— " " June, 1913	4 95	
42897— " " July, 1913	8 55	
42994— " " August, 1913	10 80	
		$62 10

W. H. Maund, Travelling Auditor, North Bay, Ont.

37731—Travelling expenses, November, 1912	$8 15	
36874— " " December, 1912	33 05	
38827— " " January, 1913	41 60	
37848— " " February, 1913	33 45	
39148— " " April, 1913	48 00	
40815— " " May, 1913	86 25	
40672— " " June, 1913	37 55	
42357— " " July, 1913	35 25	
42561— " " August, 1913	25 30	
43507— " " September, 1913	54 00	
43438— " " October, 1913	56 95	
		$459 55

MIGHT DIRECTORIES, LTD., TORONTO, ONT.

38761—Press clippings, January, 1913	$1 10	
37764—Copy 1913 Toronto Directory	10 00	
28987—Press clippings, Sept., Oct., November, 1912	3 23	
39650— " " February and March, 1913	1 92	
40863— " " April, 1913	48	
42963— " " August, 1913	67	
		$17 40

JOSEPH E. MILLS, WAH-TAY-BEG, ONT.

40467—Ties	$59 55	
39461—Ties	93 30	
		$152 85

DAN MULVIHILL, EARLTON, ONT.

37471—Donation for cow alleged killed	$40 00	
		$40 00

MARSH & TRUMAN LUMBER CO., CHICAGO, ILL.

37679—White oak	$124 80	
38615—Oak	13 87	
39393—White Oak	148 20	
39957—White oak	300 61	
41053—White oak	285 43	
41006—Adjustment of freight charges	24 05	
41144—White oak	205 31	
42211—White oak	316 08	
42305—Car sills	1,283 42	
		$2,701 77

MASTER CAR BUILDERS' ASSOCIATION, CHICAGO, ILL.

41172—Annual dues for year ending June 30th, 1914	$5 00	
42890—M. C. B. rule books	1 45	
		$6 45

H. F. MACDONALD, ACCOUNTANT, TORONTO, ONT.

37501—Services rendered commission, November, 1912	$150 00	
26568— " " " December, 1912	150 00	
36686— " " " January, 1913	160 00	
38663— " " " February, 1913	160 00	
37886— " " " March, 1913	160 00	
39825— " " " April, 1913	160 00	
39108— " " " May, 1913	160 00	
40126— " " " June, 1913	160 00	
41417— " " " July, 1913	160 00	
41452— " " " August, 1913	160 00	
42605— " " " September, 1913	160 00	
42616— " " " October, 1913	160 00	
		$1,900 00

A. T. MOTH, FOREMAN OF MOTIVE POWER, COCHRANE, ONT.

37994—Travelling expenses, February, 1913	$2 00	
		$2 00

A. MAILLE, EARLTON, ONT.

39461—Ties	$949 02	
40465— "	3,034 17	
40014— "	678 72	
40098— "	75 42	
		$4,737 33

MAP SPECIALTY COMPANY, TORONTO.

41545—Patching drawing, preparing engraving, Latchford extension	$26 25	
42965—Preparing engraving Englehart Townsite, etc.	24 50	
		$50 75

MACKENZIE & CO., TORONTO.

40239—Framing photo, 9¼ in. x 11 in.	$1 00	
43078—Framing etching	4 00	
		$5 00

MUSSENS, LTD., MONTREAL, QUE.

40361—Gauges	$15 00	
39712—Hammers	10 80	
40939—Track gauges, ratchets	54 20	
41193—Steel braces	337 44	
41435—Damage to hand car, claim No. 6899	3 00	
41457—Loss account, shortage one box machinery	20 60	
41304—Drills and bits	152 76	
42205—Drills	14 40	
43057—Concrete mixer	900 00	
43414—Repair parts	1 10	
43726—Repair parts	29 10	
		$1,538 40

MAINE CENTRAL RAILWAY, PORTLAND, ME.

37238—Car service balance, November, 1912	$6 75	
39185—Car service balance, December, 1912	3 85	
38480—Car repairs, audit No. 7916	1 20	
39326—Car service balance, March, 1913	12 05	
39992—Car repairs, audit No. 9951	2 23	
40782—Car service balance, April, 1913	8 10	
42141—Car repairs, bill No. 2504	1 84	
38323—Car service balance, October, 1912	29 05	
38459—Repairs to cars, bill No. 4750	2 67	
37026—Repairs to cars, audit No. 5930	1 81	
42992—Car service balance, August, 1913	4 95	
		$74 50

MONTREAL STAR PUBLISHING CO., MONTREAL, QUE.

40674—Advertisement Cobalt station grounds	$25 20	
		$25 20

MANISTEE & NORTH EASTERN RAILROAD, MANISTEE, MICH.

42043—Car service balance, May, 1913	$3 60	
		$3 60

WM. MILNE & SON, NORTH BAY, ONT.

38139—Lumber, pine	$847 72	
38150—Lumber, shiplap	1,071 12	
39769—Lumber and pine	76 59	
39903—Siding rebate, Porcupine siding claim No. 6321	30 00	
38888—Siding rebate, September 21st, 1912, to February 10th, 1913	36 00	
39714—Pine	360 20	
39940—Lumber	285 48	
41361—Overcharge in rate, lumber claim No. 5327	14 00	
41146—Timber	173 74	
41887—Siding rebate, Trout Mills siding, June 1st to June 30th, claims Nos. 6636-6505	781 00	

WM. MILNE & SON.—*Continued.*

41480—50 per cent. charged on B/C No. 15798, damages to engine No. 106	$127 62	
42259—White pine	344 19	
42431—White pine	401 49	
42210—No. 1 lath	12 50	
42792—Lumber	110 00	
42892—Lumber	785 98	
43164—Lumber	389 86	
43778—No. 1 lath	55 00	
		$5,902 49

MALKIN & RYAN, CHARLTON, ONT.

38986—Refund of transfer charges assessed in error, claim No. 5514	$5 40	
40465—Ties	1,099 20	
40016—Ties	572 04	
40020—Ties	122 94	
40020—Ties	36 30	
40176—Overcharge in rate, Hay claim No. 6357	3 48	
42000—Switch sets	115 85	
43055—Piles	204 00	
43103*a*—Fence posts	104 00	
43103*a*—Ties	38 62	
		$2,301 83

AGENT AT MATHIESON, ONT.

41389—Outstanding account, one bar square tool steel, claim 6765	$0 35	
		$0 35

DENNIS MURPHY, COMMISSIONER, OTTAWA, ONT.

See statement for vouchers—Honorarium for year ending October 30th, 1913	$1,000 00	
See statement for vouchers—Expenses for year ending October 30th, 1913	125 75	
		$1,125 75

W. R. MAHER, LOCATING ENGINEER, NORTH BAY, ONT.

37729—Travelling expenses, October and November, 1912	$44 30	
40023—Travelling expenses, Jan., Feb. and March, 1913	187 35	
39048—Travelling expenses, March and April, 1913	79 70	
39834—Travelling expenses, April and May, 1913	49 55	
41010—Travelling expenses, May and June, 1913	100 05	
43601—Travelling expenses, June, July and August, 1913	86 19	
		$547 14

MONTREAL LOCOMOTIVE WORKS, LTD., MONTREAL, QUE.

41191—C. I straps	$80 00	
41148—Draft pipes and smoke boxes	121 58	
		$201 58

W. H. MINER COMPANY, CHICAGO, ILL.

39515—Casting	$68 00	
39602—Side bearings	19 50	
42203—Stop castings	39 00	
42447—Side castings	138 80	
43345—Stop casting	39 00	
		$304 30

MISSOURI, KANSAS AND TEXAS RAILWAY, ST. LOUIS, MO.

38327—Car service balance, October, 1912	$8 40	
38457—Car repairs, April, 1912, bill No. B 106328	1 37	
37242—Car service balance, November, 1912	6 30	
39189—Car service balance, December, 1912	29 40	
38614—Car service balance, January, 1913	17 10	
40439—Car repairs, November and December, 1912	3 27	
39330—Car service balance, March, 1913	15 75	
39990—Car repairs, January and February, 1913	12 80	
40786—Car service balance, April, 1913	26 10	
42041—Car service balance, May, 1913	23 85	
42143—Car repairs, bill No. 87174	2 54	
41814—Car service balance, June, 1913	11 25	
42899—Car service balance, July, 1913	8 10	
43289—Car repairs, bill No. 90989	11 67	
42996—Car service balance, August, 1913	5 40	
43352—Car repairs, bill No. 91772	3 21	
		$186 51

METHODIST BOOK AND PUBISHING HOUSE, TORONTO, ONT.

37877—Printing pamphlet No. 10	$136 10	
41805—Binding and lettering annual report, 1912	27 80	
		$163 90

M. P. MALLON, TORONTO, ONT.

39050—Supplies furnished private car "Sir James," March, 1913.	$11 90	
		$11 90

J. D. MACALPINE, COLLINWOOD, OHIO.

42894—Rule books, M. C. B. rules	$1 08	
43678—Copies *Interchange Car Manual*	1 50	
39401—Supplement to 1912 edition of *The Car Interchange Manual*	0 20	
		$2 78

BENJAMIN MOORE AND CO., LTD., TORONTO, ONT.

40478—Paint	$63 73	
41302—Paint	44 03	
		$107 76

THE MUIR CAP COMPANY, TORONTO, ONT.

37598—Caps	$4 67	
		$4 67

H. MARLEAU, NORTH BAY, ONT.

38133—Sand	$38 00	
38889—Sand	36 00	
38149—Sand	29 00	
40344—Sand	11 00	
42790—Sand	29 00	
		$143 00

MURRAY-KAY, LIMITED, TORONTO.

37604—Mat	$2 00	
40727—Sweeper	3 50	
		$5 50

MIDLAND VALLEY RAILROAD, MUSKOGEE, ONT.

41818—Car service balance, June, 1913	$3 15	
42903—Car service balance, July, 1913	1 80	
		$4 95

MINNEAPOLIS AND ST LOUIS RAILROAD. MINNEAPOLIS, MINN.

38329—Car service balance, October, 1912	$10 50	
37246—Car service balance, November, 1912	4 20	
39444—Car service balance, March, 1913	17 55	
40790—Car service balance, April, 1913	14 85	
42045—Car service balance, May, 1913	14 85	
42366—Car repairs, bill No. 71170	3 41	
43350—Car repairs, bill No. 71780	4 89	
		$70 25

MISSISSIPPI CENTRAL RAILROAD. HATTIESBURG. MISS.

38331—Car service balance, October, 1912	$5 25	
40792—Car service balance, April, 1913	11 70	
42047—Car service balance, May, 1913	3 60	
		$20 55

MONETARY TIMES PRINTING CO., TORONTO. ONT.

37913—One year's subscription, expiring December, 1913	$3 00	
36718—Advertising, one-quarter page in *Am. Review*	30 00	
40670—Advertisement—Cobalt Station Grounds	6 50	
		$39 50

A MONTEITH. WAH-TAY-BEG. ONT.

40467—Ties	$295 59	
40098—Ties	38 10	
		$333 69

J. MONTEITH. WAH-TAY-BEG. ONT.

37126—Ties	$154 26	
40467—Ties	185 46	
		$339 72

MINERAL RANGE RAILROAD. MARQUETTE, MICH.

37332—Ticket balance, November, 1912	40	
		40

J. W. MAHON. COBALT. ONT.

42739—Drawing two declarations and attending on Mr. D. H. Way, *re* claim	$5 00	
		$5 00

MISSISSIPPI RIVER AND BONNE TERRE RY., BONNE TERRE. MO.

39193—Car service, balance, December, 1912	$7 70	
38618—Car service, balance, January, 1913	5 40	
39334—Car service, balance, March, 1913	3 15	
		$16 25

MORRILL REFRIGERATOR LINE. OTTUMWA. IA.

39195—Car service, balance, December, 1912	$3 79	
		$3 79

THE MACLEAN PUBLISHING CO., LTD., TORONTO, ONT.

40303—Subscription to *Canadian Machinery*, January, 1911, to 1913	$2 00	
		$2 00

MACDONALD AND SONS, LTD.

42208—Paint	$23 52	
		$23 52

HUGH C. MCLEAN, LTD., TORONTO, ONT.
(Contract Record.)

39509—Subscription to *Canada Lumberman and Woodworker* to March, 1914	$2 00	
		$2 00

MATTHEWS, LAING AND COMPANY, LTD., PETERBOROUGH, ONT.

37606—Victoria Rolls, for Commissary	$23 50	
38740—Loss, five cases eggs, delayed, claim No. 6405	33 38	
37527—Amount realized on two baskets meat refused, claim 5942	9 43	
		$66 31

MASSEY-HARRIS COMPANY, LTD., TORONTO, ONT.

37603—Shortage two seats, claim No. 5824	$8 00	
37768—Damage to implements, claim No. 6173	1 40	
40593—Damage to two mower wheels, claim No. 6409	17 41	
41365—Loss one pole in transit, claim No. 6819	9 04	
42751—Loss mower, Earlton fire, claim No. 7258	50 98	
42542—Loss account, one plow share broken in transit, claim No. 7318	0 85	
		$87 68

A. E. MALLETTE, COCHRANE, ONT.

38346—Jewels and cylinder inserted in clock	$5 00	
		$5 00

MACKINAC TRANSPORTATION COMPANY, GRAND RAPIDS, MICH.

37330—Ticket balance, November, 1912	$1 00	
		$1 00

F. MULLIGAN, MATHESON, ONT.

40465—Ties	$100 38	
		$100 38

TOWN OF MATHESON, ONT.

40206—For donation towards building sidewalks	$100 00	
		$100 00

MISSOURI AND NORTH ARKANSAS RAILROAD, EUREKA SPRINGS, ARK.

40882—Car repairs, bill No. 5007	$1 32	
41633—Car repairs, audit No. 5201	0 88	
		$2 20

GEORGE P. MURPHY, OTTAWA, ONT.

41898—B. C. fir	$1,500 42	
43334—B. C. fir	306 19	
		$1,806 61

MacDougall and McClusky, Cochrane, Ont.

40529—Work performed on Iroquois Falls branch, April, 1913, estimate No. 1	$3,287 61	
40683—Team hire and labor supplied, March, April, 1912	189 64	
41127—Estimate No. 2, Iroquois Falls branch, May, 1913	8,528 72	
40676—Hauling logs, assisting engineers and meals furnished, May, 1913	143 05	
41711—Amount of estimate No. 1, Cochrane revision; amount of estimate No. 3, Iroquois Falls branch	21,671 03	
42469—Amount of certificates Nos. 2 and 4, work on Iroquois Falls branch and Cochrane revision contract, July, 1913	13,343 07	
42555—Men digging, meals supplied engineers, and at camp on right of way	509 05	
42731—Work performed on Iroquois Falls branch, month of August, 1913	4,947 95	
43615—Work performed on Iroquois Falls branch, September, 1913	3,668 49	
43621—Work performed on Cochrane revision, August, 1913	10,017 79	
43623—Work performed on Cochrane revision, September, 1913.	5,194 31	
43228—Team and teamster, etc., Iroquois Falls branch and Cochrane revision	66 40	
		$71,567 11

J. Marshall, Heaslip, Ont.

40100—Ties	$215 46	
		$215 46

MacBride Press, Ltd., Brantford, Ont.

43347—Printing 20 M Form 1421	$19 60	
		$19 60

Jas. B. Mitchell, Goldsmith, Ont.

40098—Ties	$28 35	
		$28 35

MacAuley and Futooye, Elk Lake, Ont.

41629—Contract, cleaning and fixing road south of Elk Lake along Montreal River; final certificate No. 1	$140 00	
		$140 00

Walter Monahan, Matheson, Ont.

42981—Donation *re* horse alleged killed, Matheson, July 17th, 1913	$50 00	
		$50 00

A. Marshall, Heaslip, Ont.

38565—Ties	$151 92	
39589—Ties	205 14	
		$357 06

D. Monteith, Wah-Tay-Beg.

37126—Ties	$140 91	
40467—Ties	253 02	
		$393 93

Albert Montpetite, Earlton, Ont.

36650—Ties	$9 60	
39463—Ties	278 61	
		$288 21

A. J. Morrison, Relieving Agent, North Bay, Ont.

37733—Travelling expenses, month of October, 1912	$24 00	
37735—Travelling expenses, month of November, 1912	21 50	
		$45 50

T. Morden, Iroquois Falls, Ont.

37126—Ties	$97 35	
37126—Ties	58 02	
37938—Ties	179 82	
41293—Ties	49 56	
		$384 75

Mines Water Supply Co., Ltd., Cobalt, Ont.

36674—Damage to wood pipe, claim No. 5013	$225 60	
		$225 60

S. Monteith, Wah-Tay-Beg, Ont.

37126—Ties	$134 49	
		$134 49

Morrow and Beatty, Timmins, Ont.

38143—Overcharge on rails	$13 39	
40241—Meals supplied, January and February	14 70	
39502—Labor supplied, meals supplied camp No. 3, March, 1913..	20 35	
		$48 44

W. R. Montgomery, New Liskeard, Ont.

37776—Loss one bottle whiskey, account breakage in transit, claim 6155	$1 05	
39901—Two bottles whiskey short and ft. charges, claim 6166....	1 52	
38886—Refund demurrage, account delay to shipping instructions by railway company	16 00	
41363—Loss bottle whiskey broken in transit, claim No. 6878....	0 80	
41459—Bottle whiskey broken in transit and shortage, claims Nos. 6879, 6877, 6887	2 90	
41461—Bottle whiskey broken in transit, claim No. 6858	0 68	
41463—Loss one bottle gin broken in transit, claim No. 6875....	0 50	
41544—Loss one case whiskey short, claim No. 6841	6 20	
41568—Loss three gals. gin short, claim No. 6876	9 95	
42671—Loss two bottles gin broken in transit, claim No. 6840...	1 50	
		$41 10

Marshall-Ecclestone, Ltd., Porcupine, Ont.

38742—Loss four bars steel, claim No. 6038	$15 04	
40400—Garbage pails	3 50	
		$18 54

Mackenzie, Mann and Co., Ltd., Toronto, Ont.

38884—Overcharge in advance on ties, claim No. 6592	$14 00	
42669—Refund of freight paid in error, claim No. 7135	115 50	
		$129 50

John Matchett, Haileybury, Ont.

38936—Loss three pairs boots, pilfered in transit, claim No. 6527.	$21 20	
		$21 20

JOHN MURDOCK, KELSO, ONT.

40467—Ties	$73 14	
		$73 14

THOS. MUIR, TORONTO, ONT.

39236—For north ½ lot 5, con. 5, Pacaud	$106 00	
		$106 00

MAPLES, LIMITED, TORONTO, ONT.

39897—Loss one barrel syrup damaged in unloading, claim 6395.	$25 50	
		$25 50

THE MODEL BAKERY, HAILEYBURY, ONT.

38910—Loss apples, account deterioration, claim No. 6058.....	$1 75	
		$1 75

N. MICHEL, NUSHKA, ONT.

40465—Ties	$201 90	
40098—Ties	127 35	
		$329 25

A. MORRISON DANE, ONT.

39200—Six boxes herring short, claim No. 6406	$0 90	
40655—Supplies furnished, month of April, 1913	7 10	
		$8 00

W. MILLS, HEASLIP, ONT.

40020—Ties	$70 43	
40100a—Ties	23 47	
		$93 90

MORGANTOWN AND KINGWOOD R.R., MORGANTOWN, W. VA.

39336—Car service, balance, 1913	$3 60	
		$3 60

CHAS. MICKLE, GRAVENHURST, ONT.

40198—right of way, E.L.B., 6.21 acres, s. ½ lot 12, con. 6.....	$62 10	
		$62 10

JOSEPH MYERS, NEW LISKEARD, ONT.

41437—Siding rebate, Nov. 1st, 1912, to March 18th, 1913, claim No. 6985	$20 00	
		$20 00

GEO. F. MILLER, BIGWOOD, ONT.

41759—Loss account, damage to H. H. goods in transit, claim No. 5900	$24 25	
		$24 25

PETER MORRIS, NEW LISKEARD, ONT.

41769—Loss 1¾ gals. syrup damaged in transit, claim No. 6872 ..	$1 75	
		$1 75

W. H. MERRIMAN & CO., ST. CATHARINES, ONT.

41546—Refund demurrage, error in billing, claim No. 7128	$4 00	
		$4 00

MRS. P. J. MURPHY, COBALT, ONT.

39671—Loss, two turkeys, claim No. 6283	$6 00	
		$6 00

MORSE TWIST DRILL & MACHINE CO., NEW BEDFORD, MASS.

43381—Drills	$2 90	
		$2 90

N. L. MARTIN & CO., TORONTO, ONT.

38984—Overcharge in rate, paper, claim No. 4873	$22 50	
		$22 50

SHERMAN MORLEY, THORNLOE, ONT.

40100*a*—Switch sets	$67 20	
41971—Ties	22 40	
		$89 60

MICHIE & CO., LTD., TORONTO, ONT.

38017—Supplies furnished private cars, "Sir James" and "Temagami": Sir James P. Whitney's trip to Thorndale, Ont., October 24th, 1913; Sir John Gibson's trip to Chatham, Ont., October 15th, 1913	$24 89	
36836—Supplies furnished private car, "Temagami": Sir James Whitney's trip to New York, November 14th and December 15th, 1912; Hon. Dr. Reaume and party trip, November, 1912	72 72	
36920—Supplies furnished private car, "Sir James," October, 1912, Commission's monthly trip of inspection	34 70	
38985—Supplies furnished private car, "Sir James," December, 1912, Commission's monthly trip of inspection	63 81	
40307—Supplies furnished private car, "Sir James," March, 1913, Sir James Whitney's trip to Ottawa, Ont., March 6, 1913	6 29	
40867—Supplies furnished private car, "Sir James," April, 1913, Commission's monthly trip of inspection	2 60	
41694—Supplies furnished private car, "Sir James," June and July, 1913, Sir James Whitney's trip to Markdale, Ont., June 2, 1913; Canadian Press Association trip to Algonquin Park, June 4, 1913; Lieut.-Governor's trip to Galt, Ont., June 7, 1913; Hon. James Duff's trip to Monteith, Ont, July 28, 1913; Lieut.-Governor's trip to Fort Erie, Ont, July 29, 1913	187 24	
43085—Supplies furnished private car, "Abitibi, Lieut-Governor's trip to Galt, June 7, 1913	3 45	
		$395 70

MINERAL SPRINGS, LTD., TORONTO, ONT.

36720—Mineral water supplied, November and December, 1912.	$6 00	
37846— " " January, 1913	3 25	
38046— " " February, 1913	2 75	
39652— " " March, 1913	3 75	
40657— " " April, 1913	4 25	
41543— " " May and June, 1913	7 50	
41504— " " July, 1913	3 75	
42058— " " August, 1913	3 25	
42576— " " September, 1913	3 25	
		$37 75

R. H. MITCHELL, TRAFFIC ACCOUNTANT, NORTH BAY, ONT.

37727—Travelling expenses, October, 1912	$5 60	
39146—Travelling expenses, February and April, 1913	5 00	
41008—Travelling expenses, May, 1913	4 00	
		$14 60

MARTIN & DEACON, NORTH BAY (NOW WM. MARTIN).

43087—Premium on London Guarantee and Accident Bond, conductors	$9 75	
		$9 75

GEO. O. MAITLAND, NORTH BAY, ONT.

41348—Repairs to North Bay machine shop, June, 1913	$290 73	$290 73

G. L. MATTICE, COCHRANE, ONT.

37615—Loss two bottles wine account damage, claim No. 5766	$1 50	$1 50

J. A. MITCHELL, THORNLOE, ONT.

37525—Shortage one bag of oats, claim No. 5538	$2 00	$2 00

JOHN W. MYLES, HAILEYBURY, ONT.

42540—Damage to clock in transit and freight charges, claim No. 7016	$4 14	$4 14

MODERN RULE AND MFG. CO., CHICAGO, ILL.

43469—Baggage rules	$14 40	$14 40

MONTGOMERY, FERGUSON HARDWARE CO., SWASTIKA, ONT.

43626—Hardware	$14 10	$14 10

THOS. MAGLADERY, ENGLEHART, ONT.

42791—Granite cups supplied for use on special train settlers to Monteith, Ont. (Englehart Agricultural Society)	$1 20	$1 20

J. M. MCNAMARA, NORTH BAY, ONT.

36756—Legal services, account October, November, December, 1912	$117 14	
40247—Services rendered, January, February and March, 1913	94 20	
41222—Legal services and disbursements quarter ending June 30th, 1913	124 00	
43369—Services rendered and expenses for quarter ended Sept. 30th, 1913	88 40	
		$423 74

J. A. MCDERMOTT, GUELPH, ONT.

40440—Services rendered, Joseph McCann, deceased	$25 00	$25 00

J. J. MCNEIL, LATCHFORD, ONT.

4200—Fence posts	$373 60	$373 60

MRS. H. MCKINLEY, COCHRANE, ONT.

40509—Donation, assistance for family *re* Henry McKinley, deceased	$10 00	$10 00

MCINTYRE PORCUPINE MINES, LTD., SCHUMACHER, ONT.

40595—Loss account damage to bag of sugar, claim No. 6610	$5 79	
42511—Overcharge in rate, machinery, claim No. 6680	17 80	
42644—Damage to furnace and express on duplicate broken parts, claim No. 6517	11 00	
		$34 59

J. McBURNEY, NORTH BAY, ONT.

38891—Lumber (birch)	$165 20	
40367—Birch	116 32	
39716— "	69 42	
42433— "	317 84	
37612— "	229 58	
43728— "	421 40	
		$1,319 76

H. H. McGEE, TRAVELLING AUDITOR, NORTH BAY, ONT.

36694—Expenses, December, 1912	$24 25	
38829— " January, 1913	16 35	
37850— " February, 1913	48 30	
40025— " March, 1913	42 20	
39150— " April, 1913	62 40	
40817— " May, 1913	55 60	
41012— " June, 1913	51 45	
42391— " July, 1913	75 00	
43509— " August and September, 1913	45 70	
43440— " October, 1913	24 85	
		$446 10

P. McDONALD, B. AND B. DEPT., NORTH BAY, ONT.

37481—Travelling expenses, November, 1912	$14 00	
		$14 00

A. J. McGEE, SECRETARY-TREASURER, TORONTO, ONT.

See statement for vouchers—Pay Rolls, Toronto Office, Nov. 1st, 1912, to Oct. 31st, 1913	$10,117 34	
See statement for vouchers—Expense accounts, including petty cash disbursements, Nov. 1st, 1912, to Oct. 31st, 1913	394 50	
See statement for vouchers—Remuneration for year ending Oct. 31st, 1913	3,550 00	
		$14,061 84

McCOOL-THORNLOE TELEPHONE COMPANY, THORNLOE, ONT.

36754—Repairs to telephone line destroyed by contractors, Elk Lake branch	$79 49	
		$79 49

JOHN A. McKINNON, HAILEYBURY, ONT.

39725—Filling ice houses at Cochrane and Englehart	$950 00	
		$950 00

J. A. McFARLANE, NORTH BAY, ONT.

37647—Cartage during month of October, 1912	$1 75	
36750—Cartage during month of December, 1912	1 10	
36752—Cartage during month of November, 1912	2 25	
38348—Cartage, February 20, 27, 1913	2 35	
40551—Carting trunks	1 25	
43082—Cartage month of September, 1913	6 95	
		$15 65

McCORD MANUFACTURING CO., DETROIT, MICH.

39407—Gaskets	$14 22	
40945—McKim gaskets	12 60	
		$26 82

JOHN MCFADDEN, HEASLIP, ONT.

37938—Ties	$267 57	
39675—Overcharge in rate, poles, claim No. 5537	16 38	
40014—Ties	46 17	
40100*a*—Switch sets	134 38	
40418—Loading ties	7 95	
41378—Donation, cow alleged killed, M.P. 136½, July 3rd, 1913	20 00	
4200—Switch sets	44 80	
		$537 25

T. C. MCGRATH, IROQUOIS FALLS, ONT.

37126—Ties	$53 28	
		$53 28

MCCORD & COMPANY (INC.), CHICAGO, ILL.

38147—Journal boxes	$83 00	
39405—Journal boxes	175 00	
40943—McCord lids	40 00	
40991—Journal boxes	96 00	
42449— " "	47 00	
43059— " "	222 00	
43385— " "	79 00	
		$742 00

MCCONWAY & TORLEY COMPANY, PITTSBURG, PA.

39517—Locking blocks lifters	$7 20	
		$7 20

MCCOLL BROS. & CO., TORONTO, ONT.

38154—Varnish soap	$29 52	
40480—Soap	28 20	
		$57 72

A. MCGOUGAN, CHARLTON, ONT.

43103*a*—Fence posts	$10 61	
43103*a*—Fence posts	9 51	
		$20 12

AMBROSE MCCANN, LOCKWOOD P.O., ONT.

40243—Fares *re* collision engines Nos. 122 and 107, Cochrane	$54 50	
		$54 50

MCCAMUS AND MCKELVIE, LISKEARD, ONT.

39909—Loss one box butter account shortage, claim 6030	$13 00	
38938—Siding rebate, year 1913	132 00	
37683—Refund of amount deposited on construction of siding	35 76	
		$180 76

J. G. MCMILLAN, ENGINEERING DEPT., NORTH BAY, ONT.

37737—Expenses, March to July, 1912	$46 50	
38048— " August to December, 1912	45 49	
43586— " February to October, 1913	24 22	
		$116 21

MCDONALD & WILSON, TORONTO, ONT.

36922—Electric fixtures and shades	$7 00	
		$7 00

R. McDougall Co., Ltd., Galt, Ont.

39942—Pump parts	$24 75	
		$24 75

McAuslan & Anderson, North Bay, Ont.

37957—Service rendered, October 17th, 1913	$5 00	
38019—Search of field notes and making sketch of Opera House, Nov. 7th	1 00	
37096—Services rendered and expenses, surveys	25 00	
38989—Services *re* Commando Lake	7 00	
37852—Expenses and services months of January and Feb., 1913..	287 50	
39095—Description of Imperial Bank premises at Cobalt	2 00	
39521—Plans, descriptions, etc.	43 00	
39542—Services rendered description of lot No. 43, Town of Cobalt, etc.	13 00	
40869—Services rendered, May, 1913	116 30	
40678—Services and expenses *re* lot 8, con. 6, Twp. of Bucke	47 80	
40680—Plans, descriptions, etc.	16 60	
41625—Two descriptions of Iroquois Falls branch	2 00	
42723—Services rendered *re* north part lot 11, con. 4, Twp. of Dack —Plan and description right of way n. e. ¼ n. ½, lot 10, con. 2, Teasdale	47 80	
42682—Services and expenses for plans and descriptions Elk Lake grounds and pipe line	54 50	
43134—Board and services *re* New Liskeard spur, Matheson Townsite, Kirkland Lake telephone line	264 00	
		$932 50

McClary Manufacturing Co., Toronto, Ont.

38145—Box stoves	$47 60	
37610—Canada plate	57 95	
39403—Box stoves	153 00	
40369— " (balance)	30	
39718—Soot boxes	1 60	
40482—Delivery cans	14 95	
41960—Box stoves	102 00	
43471—Soot doors	27	
		$377 67

Albert McChesney, Goldlands, Ont.

40100*a*—Ties	$38 23	
40418—Ties	12 74	
		$50 97

John McIvor, Master Mechanic's Dept., North Bay, Ont.

40055—Expenses, March, 1913	$5 50	
		$5 50

J. C. McNabb & Co., Cobalt, Ont.

39673—One chair broken in transit, claim No. 6257	$1 10	
42793—Ambulance services account injured sectionman, August 9th, 1913	3 00	
		$4 10

R. G. McBeth, Paris, Ont.

37463—Five letters on Northern Ontario, published as pamphlet No. 10	$25 00	
		$25 00

The John McDougall Caledonian Iron Works, Montreal, Que.

37531—Freight paid twice, claim No. 5888	$36 00	
		$36 00

McAuliffe, Davis Lumber Co., Ltd., Ottawa, Ont.

37784—Overcharge in rate, lumber, claim No. 5084	$59 32	
		$59 32

J. P. McLaughlin, Timmins, Ont.

38748—Loss, oranges missing from crate, claim No. 5808	$2 40	
		$2 40

S. McChesney, New Liskeard, Ont.

37617—Siding rebate, claim No. 6011	$51 56	
41367—Siding rebate, claim No. 6947	84 00	
		$135 56

Helen McNiece, Toronto, Ont.

38828—Services rendered commission, April, 1913	$50 00	
		$50 00

J. L. McCarthy, Wah-Tay-Beg, Ont.

40469—Ties	$65 23	
40100—Ties	21 74	
		$86 97

McCaffrey & McQuigge, Earlton, Ont.

37651—Estimates Nos. 3 and 8, Elk Lake branch contract, November, 1912	$33,991 54	
37779—Meals supplied engineer's department	23 79	
37959—Meals supplied Inspector J. Birch, and at residency, 2	17 00	
36638—Estimates Nos. 4 and 9, Elk Lake Branch, contract, December, 1912 (final)	35,771 92	
36794—Overcharge in rate, explosives, claim No. 5744	27 40	
36972—Meals supplied camps Nos. 1 and 2, and labor unloading fence posts at Earlton	115 82	
37098—Meals supplied, Sept. to Dec., 1912, use of engine crew, etc., labor supplied for culverts	379 67	
38763—B.C. fir, bolts and nuts, dump cars	1,970 92	
38843—Full settlement of all accounts claims as agreement, December 14, 1912	5,000 00	
37944—Supplies, telephone sets, coal, labor supplied, Montreal River bridge	2,957 93	
39519—Swinging cables, camps 1, 2 and 3, outbuildings	71 78	
39771—Amount of credits on bills collectible, as agreed upon	245 00	
38808—Freight charges on car of rails paid in error	121 56	
40147—Road dept. material	53 65	
40249—Hauling cars on Elk Lake Branch, December, 1912	195 00	
		$80,942 99

Dr. A. McMurchy, North Bay, Ont.

40245—Color sense and hearing examination of employees, October and November, 1912	$20 50	
43080—Examination of trainmen for vision, color, sense and hearing, month of September, 1912	18 00	
		$38 50

G. McClelland, care of Canada Ry. News Co., Toronto, Ont.

40402—Supplies, train No. 1, account of snowstorm, Cochrane	$4 05	
		$4 05

McLarens, Limited, Hamilton, Ont.

41465—Loss, one box extracts, short, claim No. 6892	$8 00	
		$8 00

D. McGregor, Latchford, Ont.

40178—Overcharge in rate, vegetables, claim No. 6722	$0 90	
		$0 90

McLellan Company, New Liskeard, Ont.

41441—Siding rebate, Sept., 1907, to Sept., 1910, claim No. 6984	$138 00	
		$138 00

G. McIntosh, South Porcupine, Ont.

37529—Shortage, one case biscuits, claim No. 5145	$3 38	
		$3 38

T. E. McKee, North Bay, Ont.

37581—Amount deducted from wages due ex-agent, Heslewood, Kerr Lake	$32 00	
		$32 00

Colin McRae, New Liskeard, Ont.

43529—Lumber	$326 34	
		$326 34

K. McDonald, B. and B. Dept., Englehart, Ont.

42629—Expenses, July, 1913	$10 95	
43603—Expenses, September, 1913	7 65	
		$18 60

S. McIvor, Master Mechanic's Dept., North Bay, Ont.

43581—Expenses, September, 1913	$0 25	
		$0 25

Rev. A. J. McDonald, Cobalt, Ont.

42722—Settlement of claim No. 7324, damage to fruit	$2 25	
		$2 25

North American Bent Chair Company, Ltd., Owen Sound, Ont.

38153—Chairs	$19 60	
38158— "	8 40	
40373— "	16 80	
41157— "	16 80	
42307— "	8 40	
		$70 00

National Railways of Mexico, City of Mexico, Mexico.

37264—Car service balance, November, 1912	$10 15	
39215— " " December, 1912	4 90	
42057— " " May, 1913	2 70	
41828— " " June, 1913	1 35	
		$19 10

Nipissing Laundry Company, North Bay, Ont.

38021—Laundry work for general office	$1 56
38023— " " bunk rooms at Englehart and Cochrane.	11 52
38025— " " blankets	8 00
36924— " " superintendent's office	1 91
38050— " " bunk rooms at Englehart, Cochrane and Porcupine, and superintendent's office	30 10
37478—Laundry work for Cobalt Station	3 26
38050— " " bunk rooms at Englehart, Cochrane and Porcupine	14 60

NIPISSING LAUNDRY COMPANY, NORTH BAY, ONT.—*Continued.*

38052—Laundry work for Superintendent's office, January, 1913...	$2 28	
39785— " " Cobalt Station	80	
40371— " " blankets	14 20	
40309— " " Englehart, Cochrane and Porcupine bunk rooms	18 28	
40311—Laundry work for Sup't. office, towels	1 44	
39658— " " Cars, "Sir James" and "Temagami"....	3 68	
39660— " " Englehart, Cochrane and Porcupine March, 1913	18 16	
39880—Laundry work washing blankets	13 20	
40689—Laundry work for Englehart, Cochrane, Porcupine, April 1913	15 26	
40883—Laundry work for car "Sir James"	60	
40885— " " blankets washed	2 20	
40556— " " Porcupine bunk room	9 49	
40606— " " Cobalt Station	99	
41018— " " Englehart and Porcupine	12 87	
41703— " " general office	1 86	
41861— " " Englehart bunk room and supt.'s office.	4 75	
41606— " " general North Bay offices	1 48	
41696—Laundry work for Cobalt Station	4 87	
42995— " " Cochrane bunk room	4 65	
42504— " " general office building for month of August, 1913	75	
42684—Laundry work for Elk Lake, June and July, 1913	2 74	
42850— " " performed for general offices	1 92	
42850— " " general offices	1 92	
43084— " " car "Sir James"	4 35	
Fraser, September 25, 1913	4 40	
		$216 17

NIPISSING FOUNDRY & MACHINE CO., LTD., NORTH BAY, ONT.

38223—Hinges, castings, grates	$75 10	
37614—Castings	75	
40404—Mail bags repaired	80	
41557—Repairing of lawn mower	75	
43387—Castings	22 25	
43628—Castings	8 57	
43730—Castings	46 96	
		$155 18

AGENT AT NORTH BAY, ONT.

37808—Outstanding account of shipment handed customs, claim No. 6111	$1 82	
37810—Relief for car demurrage	2 00	
39623—Outstanding account of shipment refused, claim No. 6322.	56	
39625— " " one chair unclaimed, claim No. 6309.	50	
38750— " " hooks, claim No. 6284	43 50	
38754— " " trunk, claim No. 6348	1 55	
41497— " " goods taken over by customers, claim No. 6789	2 29	
42746—Outstanding account, charges on ship't., claim No. 7311....	4 75	
		$56 97

NORTHERN PACIFIC RAILWAY, ST. PAUL, MINN.

37040—Car repairs, July, August, September, 1912, memo. No. 010263	$7 57
39067—Car repairs, September and October, 1912	18 64
39201—Car service balance, December, 1912	40 95
40447—Car repairs, December, 1912, bill No. 945	1 54
39996— " " auditors, Nos. 17487, 2798	24 56
41281— " " February, 1913, bill No. 03266	2 67
40888— " " March 19th to March 23rd, 1913	3 03
41149— " " bill No. 05233	99

NORTHERN PACIFIC RAILWAY, ST. PAUL, MINN.—*Continued.*

42947—Ticket balance, July, 1913	$36 42	
42382—Car repairs, bill No. 06277	8 45	
43231—Car repairs, bill No. 10152	9 50	
		$154 32

NORTHERN ELECTRIC MANUFACTURING CO., LTD., MONTREAL, QUE.

37801—Wrenches, top pins, copper wire, relays	$3,244 84	
36758—Brookfield telegraph insulators	132 00	
39413—Reels, resonators, No. 616	126 08	
38156—Telephones and fittings	123 82	
39959—Station switchboards and plugs	73 64	
38822—Screw wrenches	6 00	
40505—Phone despatching outfit	2,674 89	
40947—Electric supplies	178 03	
41131—Top pins	30 40	
42213—Galv. wire	9 02	
42371—Insulators	272 00	
41964—Insulators	68 00	
42126—Top pins	91 20	
42456—Telegraph material	72 81	
43063—Telegraph material	20 13	
43349—Tools and wire	94 54	
43531—Telephones, etc.	391 29	
43182—Edison batteries	33 76	
43418—B wire, meters	99 01	
43732—Electrical supplies, phone supplies, keys, relays, etc	59 82	
		$7,801 28

A. O. NORTON, INC., COATICOOK, QUE.

37618—Track jacks	$15 75	
40486—Journal jacks	131 74	
41062—Journal jacks	41 80	
		$189 29

NEW YORK, NEW HAVEN & HARTFORD RAILROAD, NEW HAVEN, CONN.

38339—Car service balance, October, 1912	$46 55	
38461—Car repairs, August, 1912, bill No. 36932	44	
37252—Car service balance, November, 1912	65 10	
39207—Car service balance, December, 1912	35 70	
38506—Car repairs, bill Nos. 44653, 45908	3 93	
38624—Car service balance, January, 1913	13 50	
39342—Car service balance, March, 1913	62 50	
39998—Car repairs, bill Nos. 50271, 50273, February, 1913	3 52	
40800—Car service balance, April, 1913	26 30	
40960—Car repairs, April, 1913, No. 3715	1 32	
41639—Car repairs, April 22nd and May 5, 1913, bill No. 55006	1 60	
42051—Car service balance, May, 1913	27 00	
41822—Car service balance, June, 1913	42 75	
42913—Car service balance, July, 1913	37 65	
43002—Car service balance, August, 1913	54 00	
		$421 86

NEW YORK CENTRAL & HUDSON RIVER RAILROAD, NEW YORK, N.Y.

38419—Car service balances, October, 1912	$275 09
38521—Car repairs, bill No. 32336	18 75
36796—Overcharge in rate, fire brick, N.Y.C., bill No. 2195, Oct. 1912	6 20
36978—Proportion of commission allowed on tickets, July, 1912	26
37318—Car service balance, November, 1912	392 13
37334—Ticket balance, November, 1912	38 99
37460—Car repairs, acctg. Dept., No. 39767	4 59
37462—Car repairs, acctg. dept., No. 35976	13 37
38847—Car service balance, December, 1912	324 05
37790—Overcharge in rate on cyanide, claim No. 5779	36 97

NEW YORK CENTRAL & HUDSON RIVER RAILROAD, NEW YORK, N.Y.—*Continued.*

39069—Car repairs, July and November, 1912	$15 81	
38484—Car repairs, bill No. 2979	65	
38718*a*—Car servivce balance, January, 1913	418 55	
40251—Car service balance, January 31, 1913, memo. No. 509	11 92	
39392—Ticket balance, March, 1913	11 81	
39422—Car service balance, February and March, 1913	371 09	
39656—Cleaning car "Temagami" at Mott Haven, Dec. 14, 1912	1 19	
40000—Car repairs, bill No. 6418, February, 1913	5 79	
41283—Car repairs, February and March, 1913, bill No. 10426	11 01	
40442—Car repairs, bill No. 15157, April, 1913	1 20	
40852—Car service balance, April, 1913	176 20	
41645—Car repairs, bill No. 19081	26	
42109—Car service balance, May, 1913	57 75	
42513—Outstanding account, misrouting of shipment	35 60	
42384—Car repairs, bill No. 23211	44 78	
43229—Car repairs, bill No. 27312	14 18	
43480—Car repairs, bill No. 31411	26 39	
43546—Car repairs, bill No. 35479	48 43	
		$2,263 61

NASHVILLE, CHATTANOOGA & ST. LOUIS RY., NASHVILLE, TENN.

38463—Car repairs, August, 1912	$10 75	
37260—Car service balance, November, 1912	2 45	
37466—car repairs, auditors, No. 75853	9 17	
37620—Car repairs, auditors, No. 75236	74	
38630—Car service balance, January, 1913	1 35	
40445—Car repairs, December, 1912, bill No. 77127	97	
40082—Car repairs, auditors, No. 77692	1 32	
41285—Car repairs, Jan. and Feb., 1913, bill No. 78355	9 66	
40890—Car repairs, March, 1913, audit No. 79099	1 21	
41643—Car repairs, Dec. 29th, 1912, to April 3rd, 1913	2 23	
41826—Car service balance, June, 1913	1 80	
42380—Car repairs, bill No. 80381	1 32	
43006—Car service balance, August, 1913	13 05	
43476—Car repairs, Bill No. 81820	1 05	
		$57 07

NORFOLK & WESTERN RAILWAY, ROANOKE, VA.

38337—Car service, October, 1912	$0 35	
37036—Car repairs, August, 1912, book 179, page 385	19 00	
37250—Car service balance, November, 1912	37 45	
39205—Car service balance, December, 1912	53 55	
38622—Car service balance, January, 1913	61 20	
39340—Car service balance, March, 1913	44 55	
40002—Car repairs, book 185, page 223, January, 1913	8 60	
40798—Car service balance, April, 1913	1 50	
40886—Car repairs, Feb. 17th to Feb. 28th, 1913	30 91	
41641—Car repairs, Nov. 29th, 1912, to March 28th, 1913	26	
42911—Car service balance, July, 1913	22 95	
42402—Car repairs, S.M.P., book 188, page 354	3 35	
43000—Car service balance, August, 1913	16 50	
43482—Car repairs, bills Nos. 447, 150, May, 1913	2 63	
		$302 80

MUNICIPALITY OF THE TOWN OF NORTH BAY, NORTH BAY, ONT.

36634—Water supplied, October and November, 1912	$407 61
38617—Water rates for quarter ending March 31st, 1913	11 25
38893—Water supplied during December, 1912	279 86
38929—Water supplied, month of January, 1913	237 44
39773—Water supplied, month of February, 1913	255 15
39506—Water supplied, month of March, 1913	282 87
39508—Water rates for quarter ending June 30th, 1913	11 25
39914—Water supplied during April, 1913	235 06
40686—Water supplied during May, 1913	243 53

MUNICIPALITY OF THE TOWN OF NORTH BAY, NORTH BAY, ONT.—*Continued.*

41350—Water rate for quarter ending September 30th, 1913.....	$11 25	
41909—Water supplied for month of June, 1913	297 43	
42997—Water supplied during July and August, 1913	567 77	
43090—Water supplied during September, 1913	288 40	
43092—Water rate for quarter ending October, 1913	11 25	
		$3,140 12

NEW YORK, CHICAGO & ST. LOUIS RAILROAD, CLEVELAND, OHIO.

38465—Car repairs, bill No. A 11	$2 44	
37468—Car repairs, bill No. A 12	2 10	
39199—Car service balance, December, 1913	16 80	
38620—Car service balance, January, 1913	38 70	
41279—Car repairs, October, 1912, to January, 1913, bill No. A 13.	4 37	
40794—Car service balance, April, 1913	5 40	
42147—Car repairs, Oct., 1912, to Jan., 1913, bill No. A 14	23 80	
42907—Car service balance, July, 1913	10 80	
42998—Car service balance, August, 1913	8 55	
43478—Car repairs, bill A 16, A 15	10 46	
		$123 42

NEW LISKEARD WATER COMMISSION, NEW LISKEARD, ONT.

38849—Water supplied, Jan. 1, 1912 to Oct. 16, 1912.....	$427 50	
40684—Water supplied, Oct. 16, 1912, to May 16, 1913.....	270 00	
		$697 50

NORTH BAY TIMES, NORTH BAY, ONT.

41634—Advertising lots—new sub-division Town of Cobalt	$5 00	
		$5 00

S. NORFOLK, HAILEYBURY, ONT.

37616—Light of glass	$0 75	
38988—Loss 4 glass sealers, broken in transit with with connections, claim No. 6710	36	
41371—Loss account, damage to stove pipes in transit, claim 6869	45	
41467—Loss account, damage to stove, claim No. 6870	1 55	
42521—Overcharge in weight, hardware, claim No. 62726.....	3 56	
		$6 67

NEW YORK, ONTARIO & WESTERN RY., NEW YORK, N.Y.

38341—Car service balance, October, 1912	$0 70	
37038— " repairs, October, 1912, bill No. 10-435	1 20	
37254— " service balance, November, 1912	11 20	
39209— " service balance, December, 1912	4 55	
40443— " repairs, December, bill No. 1-447	1 92	
39446— " service balance, March, 1913	6 75	
41129— " repairs, Nov., 1912, and March, 1913, bill No. 3-450....	77	
40802— " service balance, April, 1913	33 75	
42053— " service balance, May, 1913	3 60	
41824— " service balance, June, 1913	3 60	
42914— " service balance, July, 1913	13 95	
43004— " service balance, August, 1913	16 20	
		$98 19

NATIONAL DRUG & CHEMICAL CO. OF CANADA, LIMITED, TORONTO, ONT.

38149—Chemicals	$58 10
39409—Sponges	62 78
38406—Caustic soda	5 00
40093—First aid cabinets, No. 1 and D—chemicals	48 13
39604—Wood alcohol	33 60

NATIONAL DRUG & CHEMICAL CO. OF CANADA, LIMITED, TORONTO, ONT.—*Continued.*

40488—Chemicals	$15 60	
42451—Caustic soda pdr.	45 08	
43555—Chemicals	7 80	
43420—Chemicals	8 75	
		$284 84

NEW YORK AND OTTAWA RY., NEW YORK, N.Y.

38405—Ticket balance, October, 1912	$1 40	
		$1 40

NATIONAL LIFE ASSURANCE CO., TORONTO, ONT.

37487—Rent of offices, November, 1912	$287 50	
36558— " December, 1912	293 75	
38653— " January, 1913	293 75	
37874— " February, 1913	293 75	
39835— " March, 1913	293 75	
39098— " April, 1913	293 75	
40116— " May, 1913	293 75	
41407— " June, 1913	293 75	
41442— " July, 1913	293 75	
42593— " August, 1913	293 75	
42608— " September, 1913	293 75	
.....— " October, 1913	293 75	
		$3,518 75

NIPISSING MINING CO., LTD., COBALT, ONT.

39911—Loss, 23 lbs. mercury, missing from flask, claim No. 5460	$12 70	
38912—Overcharge in rate, lumber, claim No. 6366	5 82	
		$18 52

NEW ENGLAND PASSENGER ASSOCIATION, BOSTON, MASS.

38354—Proportion in connection with summer excursion fares	$10 00	
		$10 00

NEW ORLEANS GREAT NORTHERN RAILROAD, BOGALUSA, LA.

38333—Car service balance, October, 1912	$7 65	
37034—Repairs to cars, July, 1912, bill No. K 232	2 40	
37248—Car service balance, November, 1912	1 05	
39197— " " December, 1912	1 05	
42049— " " May, 1913	4 05	
41820— " " June, 1913	6 75	
42905— " " July, 1913	5 40	
		$28 35

NORTHRUP, KING & CO., MINNEAPOLIS, MINN.

38167—Wild rice	$6 00	
		$6 00

NEW YORK, SUSQUEHANNA AND WESTERN RAILROAD, NEW YORK, N.Y.

38335—Car service balance, October, 1912	$4 90	
39338—Car service balance, March, 1913	2 25	
40796—Car service balance, April, 1913	7 65	
42063—Car service balance, May, 1913	2 70	
		$17 50

NORFOLK AND SOUTHERN RAILWAY, NORFOLK, VA.

38343—Car service balance, October, 1912		$0 70	
37256— " " November, 1912		3 50	
39211— " " December, 1912		10 50	
38626— " " January, 1913		21 60	
42917— " " July, 1913		1 80	
			$38 10

NEW ORLEANS, MOBILE AND CHICAGO R.R. CO., MOBILE, ALA.

37262—Car service balance, November, 1912		$2 10	
39344— " " March, 1913		3 15	
42921— " " July, 1913		6 30	
43010— " " August, 1913		13 95	
43356—Car repairs, bill No. 11641		2 37	
			$27 87

NICHOLSON FILE COMPANY, PORT HOPE, ONT.

37368—Files		$60 19	
37916— "		51 32	
38250— "		1 23	
40069— "		41 58	
38852— "		1 05	
40484— "		34 75	
41943— "		65 50	
43473— "		26 09	
42794— "		3 85	
			$285 56

NORTHERN LUMBER MILLS COMPANY, NORTH COBALT.

38942—Overcharge in rate, lumber, claim No. 6455		$13 09	
40597—Siding rebate, November and December, 1912		30 00	
41574—Siding rebate, January to June, 1913, claim No. 7213		30 00	
43792—Refund deposit on siding		253 15	
			$326 24

R. NEILY, THORNLOE, ONT.

41971—Telegraph poles		$67 50	
42000—Telegraph poles		28 25	
			$95 75

NATIONAL RAILWAY PUBLICATION CO., NEW YORK, N.Y

38352—Subscription to Quarterly Supplement of *Official Guide*, from April 1st, 1913, to March, 1914		$0 50	
39783—Six months' representation in the *Official Guide*, to July, 1913		30 00	
39654—One year's subscription to *Official Guide*, from May, 1913, to April, 1914		7 80	
41020—Subscription to the *Official Guide*, Aug., 1913, to July, 1914.		7 80	
42631—For representation in *Official Guide*, six months, to Jan. '14.		30 00	
			$76 10

AGENT NEW LISKEARD STATION, ONT.

36826—Outstanding account, freight charges, claim and expenses, claim No. 6591		$332 00	
37806—Outstanding account, shortage 6 bars iron, claim No. 6171..		1 42	
38940—Outstanding account, goods received in worthless condition		1 03	
40253—Expenses in connection with collision, Feb. 13, 1913, Engine 122-107		24 55	
41499—Outstanding account, ship't refused, claim No. 6866		35	

AGENT NEW LISKEARD STATION, ONT.—*Continued.*

42615—Cream and milk supplied by Miss Holmes for Private car "Sir James"	$1 20	
42089—Disbursements for supplies furnished car "Sir James," June, 1913	60	
42744—Outstanding account, shipment short, claim No. 7253	89	
43086—Supplies furnished private car "Abitibi"	2 37	
		$364 41

NEW ORLEANS & NORTH EASTERN RAILROAD, NEW ORLEANS, LA.

38345—Car service balance, October, 1912	$16 45	
37258— " " November, 1912	1 05	
38628— " " January, 1913	15 45	
39448— " " March, 1913	3 15	
42378—Car Repairs, bill No. 38962	40	
43354—Car repairs, bill 39937	1 22	
		$37 72

NORTHLAND PUBLISHING COMPANY, COCHRANE, ONT.

36722—Advertising, full page, Dec. 6, 1913, No. 27	$50 00	
41755—Advertisement, Cobalt station grounds	18 00	
		$68 00

AGENT AT NORTH COBALT, ONT.

41501—Outstanding account, shipt. unclaimed, sold, claim No. 6208	$1 95	
		$1 95

NATIONAL BRASS, LIMITED, LONDON, ONT.

38854—Valves	$66 27	
39411— "	61 74	
41962— "	28 35	
		$156 36

THE NORTHERN FURNISHING CO., NORTH BAY, ONT.

40949—Mattresses	$79 20	
41155—Mattresses	38 20	
		$117 40

L. H. NEIL, NEW LISKEARD, ONT.

42544—Loss, two bottles brandy, broken in transit with connections	$1 64	
		$1 64

NATIONAL MALLEABLE CASTINGS CO., CLEVELAND, OHIO.

41966—Door fasteners	$3 50	
		$3 50

NORTHERN CANADA SUPPLY CO., COBALT, ONT.

37533—Overcharge weight, pipe, claim No. 4454	$15 30
37740—Shortage, one lavatory, claim No. 5951	10 35
37742—Overcharge in weight, shipment of steel, claim No. 5930	3 61
38054—Difference between amount deposited and cost, siding at Timmins	300 50
38752—Damage to pulley, claim No. 6302	3 14
38892—Overcharge in weight, lime, claim No. 6087	31 68
38944—Refund of freight charges on shipment steel refused	92
39202—Overcharges in rate on brick, claim No. 6490	18 70

NORTHERN CANADA SUPPLY CO., COBALT, ONT.—*Continued.*

39204—Loss, three castings, claim No. 6509	$14 31	
40182—Overcharge in rate, steel sheets, claim No. 6630	62	
41373—Loss, one bundle empty cement sacks in transit, claim 6526	5 20	
41572—Overcharge in weight, carbide, claim No. 6690	5 51	
42523—Loss, one bar steel, short with connections, claim No. 6882	11 09	
		$420 93

NEW YORK, PHILADELPHIA & NORFOLK RY., PHILADELPHIA, PA.

37464—Car repairs, bill No. 4137	$0 44	
39203—Car service balance, December, 1912	1 75	
42909—Car service balance, July, 1913	3 15	
		$5 34

NORTHERN CENTRAL RAILWAY, BALTIMORE, MD.

38519—Car repairs, bill No. 156-6678	$2 25	
37470— " bill No. 7046	8 24	
42404— " bill No. 156-9785	48	
42406— " bill No. 156-187	5 92	
43358— " bill No. 156-1015	22 04	
		$38 93

NORTH BAY TELEGRAPH (T. & N. O. RY.), NORTH BAY, ONT.

37961—Telegraph service, month of October, 1912	$4 47	
38027— " " " of October, 1912	1 40	
36974— " " " of November, 1912	1 11	
36976— " " " of December, 1912	35	
38765— " " " December, 1912	39	
38991— " " " of January, 1913	57	
38350—Message, February, 1913	28	
38408—Telegraph service, month of Jan., 1913	1 67	
40691— " " " of April, 1913	86	
40871— " " " of April, 1913	29	
40604—Telegraph service, month of May, 1913	2 49	
40682—Telegraph service, May, 1913	71	
41358—Telegraph service, month of June, 1913	53	
41873—Telegraph service, June 16th and 20th	54	
41604—Telegraph service, month of July, 1913	1 07	
41698— " " " of July, 1913	1 16	
		$17 89

NEWS PUBLISHING CO. OF TORONTO, LTD., TORONTO.

39126—Advertising Elk Lake branch	$18 60	
40552—Advertising Cobalt station grounds	28 50	
		$47 10

J. C. NELSON, HEASLIP, ONT.

41293—Fence posts	$4 00	
41971—Switch sets	44 79	
41971—Telegraph poles	5 00	
		$53 79

NEW ORLEANS, TEXAS & MEXICO RAILROAD, BEAUMONT, TEX.

39213—Car service balance, December, 1912	$11 20	
41647—Car repairs, Dec. 31st, 1912, May 6, 7, 1913	10 40	
42055—Car service balance, May, 1913	7 65	
42919— " " July, 1913	1 35	
43008— " " August, 1913	9 90	
		$40 50

NORTHERN ONTARIO LIGHT & POWER CO., COBALT, ONT.

37781—Electric current supplied at S. Porcupine, September, 1912	$20 18	
37783— " " Haileybury, October, 1912	6 59	
37785— " " New Liskeard, October, 1912	27 29	
37787— " " Schumacher, Timmins, Porcupine, S. Porcupine, Oct., 1912	61 81	
38099— " " Porcupine, September, 1912..	6 17	
38101— " " Cobalt, Oct. and Nov., 1912..	46 68	
36760— " " South Porcupine, Dec., 1912.	28 73	
36926— " " New Liskeard, Oct., Nov., Dec., 1912	15 55	
36980— " " South Porcupine, Nov., 1912.	22 73	
36982— " " New Liskeard, Nov., 1912	18 25	
36984— " " Timmins, November, 1912....	12 25	
36986— " " Porcupine, November, 1912..	10 97	
36988— " " Schumacher Stn., Nov., 1912..	15 61	
36990— " " Haileybury, Nov., 1912	9 87	
36992— " " Cobalt, Nov., 1912	30 60	
37100— " " New Liskeard, Dec., 1912	24 41	
37102— " " Porcupine, Dec., 1912	15 45	
37104— " " Timmins, Dec., 1912.....	13 45	
37106— " " Schumacher, Dec., 1912	14 25	
37402— " " for engine house, Timmins, Dec., 1912	40 33	
38895— " " at Haileybury, Dec., 1912	9 55	
39523— " " Timmins Stn., Jan., 1913	11 29	
38058— " " New Liskeard, January, 1913	23 85	
39677—Cost replacing cylinder head broken in transit, claim No. 6169	9 65	
38356—Electric current supplied at S. Porcupine, Dec., 1912.....	113 26	
38358— " " Porcupine Stn., Jan., 1913...	17 77	
38360— " " Haileybury, Ont.	12 19	
39775— " " Porcupine, Schumacher and Timmins, Feb., 1913	49 96	
39777— " " Cobalt, Dec., 1912, Jan., 1913.	139 14	
39779— " " Haileybury, Feb., 1913	6 19	
39781— " " New Liskeard, Feb., 1913....	14 09	
39548— " " Cobalt Station, March, 1913..	20 91	
40880— " " Cobalt Station, April, 1913....	21 39	
41026— " " Cobalt Station, May, 1913....	21 56	
41553— " " Cobalt Station, June, 1913...	15 71	
41510— " " North Cobalt, June, 1913....	2 09	
41664*d*—Siding rebates as per statement, claim No. 7150	509 40	
41704—Electric current supplied Cobalt Stn., etc., July 17th, 1913	17 87	
42797— " " Cobalt Stn., etc., Aug., 1913	21 23	
42852— " " Cobalt Stn., etc., Sept., 1913 ...	24 35	
		$1,502 62

NIPISSING CENTRAL RAILWAY, COBALT, ONT.

38151—Angle bars	$86 00	
38056—Account of Map Specialty Co., Jan. 6th, 1913	10 85	
41945—One-half cost of station clock in Cobalt waiting-room	10 45	
43061—Culverts	581 70	
43306—For advance	30,000 00	
43780—Posts, etc., September, 1913	665 73	
		$31,354 73

NELLIE LAKE LUMBER COMPANY, NELLIE LAKE, ONT.

36650—Ties	$267 33	
		$267 33

F. H. NEWTON, COCHRANE, ONT.

42646—Refund 50 per cent. demurrage charges, claim No. 7352....	$2 50	
		$2 50

NEW ORLEANS TERMINAL COMPANY, NEW ORLEANS, LA.

38486—Car repairs, audit No. 5545	$4 24	
40449—Car repairs, January, 1913, bill No. 5927	2 53	
		$6 77

NOVA SCOTIA STEEL & COAL CO., LTD., NEW GLASGOW, N.S.

39944—Spikes	$3,025 15	
		$3,025 15

NORTHERN ONTARIO LIGHT & POWER CO., TIMMINS, ONT.

39052—Electric current, Feb. 1-28, 1913	$33 38	
39546— " March, 1913 (roundhouse)	30 42	
39556— " March, 1913	9 21	
40875— " April, 1913	6 01	
41014— " May, 1913	2 33	
41555— " June, 1913	2 89	
41865— " June, 1913	11 30	
40610— " Timmins bunk-room, May, 1913	10 18	
42633— " July, 1913	16 49	
43001— " August, 1913	23 72	
42866— " September, 1913	8 01	
		$153 94

NORTHERN ONTARIO LIGHT & POWER CO., NEW LISKEARD, ONT.

40255—Electric current, March, 1913, station	$8 41	
40659— " April, 1913, station	7 85	
40106— " agent New Liskeard, May, 1913	4 21	
40614— " New Liskeard station, May, 1913	5 13	
41512— " New Liskeard station, April, June, July, 1913	9 55	
42635— " New Liskeard station, July, 1913	6 25	
42803— " New Liskeard station, August, 1913	9 29	
42578— " New Liskeard station, August and September, 1913, agent's house	4 50	
42858— " New Liskeard station, Sept., 1913	10 17	
43362— " New Liskeard, Sept. 29th to Oct. 30th, 1913, agent's house	6 05	
		$71 41

NORTHERN ONTARIO LIGHT & POWER CO., SOUTH PORCUPINE, ONT.

39054—Meter rent quarter ending Feb. 28th, cook camp	$0 75	
39552—Current supplied, March, 1913	14 25	
40873—Electric current, South Porcupine station, April, 1913	12 89	
40406—Electric current supplied Timmins bunk and engine houses.-April, 1913	23 70	
40608—Electric current, Porcupine station, May, 1913	4 25	
40612— " S. Porcupine station, May, 1913	7 37	
41547— " S. Porcupine station, June, 1913	9 29	
41708— " S. Porcupine station, July, 1913	11 61	
42805— " S. Porcupine station, August, 1913	12 01	
42860— " S. Porcupine station, September, 1913	15 85	
		$111 97

NORTHERN ONTARIO LIGHT & POWER CO., SCHUMACHER, ONT.

40257—Current supplied, March, 1913, station, etc.	$13 39	
29420— " agent New Liskeard to March 31st, 1913	22 69	
40877— " agent at station and house, April, 1913	7 62	
41551— " station and agent's house, June, 1913	2 82	
41863— " station and agent's house, May, 1913	3 14	
41706— " station and agent's house, July, 1913	3 86	

NORTHERN ONTARIO LIGHT & POWER CO., SCHUMACHER, ONT.—*Continued.*

42801—Current supplied, station, Schumacher, and agent's house, August, 1913		$5 70	
42864— " station, Schumacher, and agent's house, Sept., 1913		8 90	
			$68 12

NORTHERN ONTARIO LIGHT & POWER CO., HAILEYBURY, ONT.

39550—Current supplied agent's house, station, freight shed, March, 1913		$5 15	
40685—Current supplied agent's house, station, freight shed, April, 1913		3 47	
40616—Electric current supplied agent's house, station, freight shed, May, 1913		2 83	
41549—Electric current supplied agent's house, station, freight shed, June, 1913		2 83	
41702—Electric current supplied agent's house, station, freight shed, July, 1913		3 07	
42799—Electric current supplied agent's house, station, freight shed, August, 1913		3 63	
42856—Electric current supplied agent's house, station, freight shed, September, 1913		3 71	
			$24 69

NORTHERN ONTARIO LIGHT & POWER CO., KERR LAKE, ONT.

41508—Current supplied Kerr Lake station, June, 1913		$1 25	
41710— " Kerr Lake station, July, 1913		1 25	
42999— " Kerr Lake station, August, 1913		1 25	
42854— " Kerr Lake station, September, 1913		1 55	
			$5 30

NORTHERN ONTARIO LIGHT & POWER CO., PORCUPINE, ONT.

39554—Current supplied, March, 1913		$10 09	
40879— " April, 1913		7 77	
41865— " June, 1913		4 97	
41700— " July, 1913		5 21	
42862— " September, 1913		8 57	
			$36 61

NORTHERN ONTARIO LIGHT & POWER CO., NORTH COBALT, ONT.

43003—Current supplied month of August, 1913		$1 69	
			$1 69

NORTH BAY LIGHT & POWER CO., NORTH BAY, ONT.

40554—Electric current, April 1st to May 25th, 1913		$0 91	
41322— " " May 25th to June 25th, 1913		29	
41506— " " June 25th to July 25th, 1913		22	
42795— " " July 26th to Aug. 27th, 1913		50	
43088— " " Aug. 27th to Sept. 29th, 1913		50	
			$2 42

A NEW WIDDIFIELD STATION, ONT.

36726—Donation, social and religious building		$50 00	
			$50 00

A. NAPIER, MCCOOL P.O., ONT.

40469—Ties		$136 74	
40018—Ties		34 86	
40020 —Switch sets		167 98	
3103*a*— " "		33 50	
3103*a*— " "		55 99	
			$429 07

NIAGARA, ST. CATHARINES & TORONTO RAILWAY, ST. CATHARINES, ONT.

40180—Overcharge in rate, silver ore, claims Nos. 1333-4-5	$24 58	
42517—Outstanding account, overcharge in advances	2 39	
42519—Overcharge in weight, silver ore, claim No. 6803	12 85	
		$39 82

NEW YORK CENTRAL LINES, TORONTO, ONT.

37557—Two tickets, Buffalo to New York	$16 00	
		$16 00

NEW LISKEARD MARBLE & GRANITE WORKS, NEW LISKEARD, ONT.

38890—Loss account, damage to case granite broken, claim No. 6256	$35 00	
		$35 00

WM. J. NEWTON, COBALT, ONT.

41369—Overcharge in weight, hay, claim No. 6733	$1 25	
		$1 25

NIPISSING POWER CO., LTD., COBALT, ONT.

42581—Charges in connection with damage to Transmission Line	$104 45	
		$104 45

NIPISSING REDUCTION CO., LTD., TORONTO, ONT.

42648—Settlement of claim No. 7492, siding rebate, February 15th to May 31st, 1913	$152 00	
		$152 00

NORTH DOME MINES, LTD., SOUTH PORCUPINE, ONT.

42686—Material supplied *re* floods South Porcupine during April, 1913	$14 25	
		$14 25

THE OFFICE SPECIALTY MANUFACTURING CO., LTD., TORONTO, ONT.

38169—Filing cabinets	$38 00	
38619—Bentwood hat tree with pan	7 50	
38621—File boards	5 50	
38767—Repairing stools	2 25	
40101—Cards	1 85	
39882—Cabinet	19 00	
39946—Filing cabinet	19 00	
41066—File boards	5 50	
42215—Filing cabinet	35 20	
42453—Filing cabinet part	3 50	
42458—Filing cabinet	42 00	
43351—Cards, guides, etc., for filing	4 75	
		$184 05

W. J. OLDHAM, SUPERINTENDENT BRIDGE AND BUILDINGS DEPT., NORTH BAY, ONT.

37843—Travelling expenses, November, 1912	$21 00	
36876— " " December, 1912	18 00	
39017— " " January, 1913	24 05	
37996— " " February, 1913	22 20	
40027— " " March, 1913	5 00	
39836— " " April, 1913	25 75	
40618— " " May, 1913	22 40	
42393— " " June, 1913	21 45	

W. J. Oldham, Road Foreman, North Bay, Ont.—*Continued.*

41636—Travelling expenses, July, 1913	$19 30	
42296— " " August, 1913	8 85	
43605— " " September, 1913	22 25	
		$210 25

Ontario Disinfectant Co., North Bay, Ont.

40097—Disinfectant	$43 16	
41159—Disinfectant	31 50	
42219—Carbolacene	33 00	
43168—Disinfectant	31 50	
		$139 16

The Ontario Gazette, Toronto, Ont.

38794—Advertising sale of unclaimed baggage	$6 75	
		$6 75

James A. Ogilvie & Sons, Montreal, Que.

37622—White, red and green flags	$15 84	
38160—Flags	20 16	
38410—Flags	17 28	
40490—Linoleum	105 00	
41064—Carpet	133 90	
42217—Combination flags	20 16	
42460—Red and yellow flags	4 32	
43389—Flags	1 44	
43557—Flags	10 80	
		$328 90

Ozan Lumber Company, St. Louis, Mo.

39961—Timber	$309 68	
		$309 68

Otley Manufacturing Co., Chicago, Ill.

40099—Cement	$26 28	
		$26 28

O'Connors & McDonald, Cochrane, Ont.

39811—Amount due final estimate, No. 1 clearing Cochrane, fire guard	$423 85	
39813—Amt. due final estimate, No. 2, clearing Cochrane, fire guard	24 05	
		$447 90

Ontario Sewer Pipe Co., Mimico, Ont.

38171—6 in. sewer pipe	$113 40	
40095—6 in. sewer pipe	151 20	
39720—6 in. H.H. trap	3 75	
39884—6 in. sewer pipe	90 00	
42170—6 in. sewer pipe	135 00	
43475—6 in. sewer pipe	127 68	
		$621 03

John O'Hara, Thornloe, Ont.

37744—Damage to one bag sugar on G.T.R. rails, claim No. 5893.	$1 57	
		$1 57

Oregon Short Line R.R., Salt Lake City, Utah.

38347—Car service balance, October, 1912	$0 35	
39343—Car repairs, May to October, 1912; Nov., 1912, bills Nos. 17241, 78131	7 81	

OREGON SHORT LINE R.R., SALT LAKE CITY, UTAH.—*Continued.*

41287—Car repairs, January, 1913, bill No. 80581	$11 84	
42408—Car repairs, bill No. 81662	1 13	
43012—Car service balance, September, 1913	3 15	
43298—Car repairs, April and May, 1913	2 42	
		$26 70

OREGON, WASHINGTON, R.R. NAVIGATION CO., PORTLAND, ME.

43014—Car service balance, September, 1913	$1 35	
37266—Car service balance, November, 1912	1 05	
39056—Car repairs, audit No. 17241	4 77	
40084—Car repairs audit, No. 19480	32	
40892—Car repairs, November, 1912, April, 1913	4 64	
42059—Car service balance, May, 1913	5 85	
41830—Car service balance, June, 1913	90	
42923—Car service balance, July, 1913	2 70	
42410—Car repairs, bill No. 21826	1 53	
		$23 11

ORDER OF RAILWAY CONDUCTORS, DETROIT, MICH.

39082—Advertisement in souvenir book	$15 00	
		$15 00

OTTAWA PAINT WORKS, OTTAWA, ONT.

41161—Paints	$142 75	
41188—Paint and varnish	57 00	
43782—Paints	54 50	
		$254 25

C. OHLMANN, MONTEITH P.O., ONT.

41293—Ties	$101 01	
		$101 01

JOHN ORR, KINGSTON, ONT.

36548—For south ½ Lot 6, Concession 6, Henwood, 13.7 acres	$300 00	
		$300 00

OIL WELL SUPPLY CO., LTD., PETROLEA, ONT.

39415—Hoskins, packer, for 4⅝ in. hole and 3 in. tubing	$18 00	
		$18 00

MRS. E. O'LEARY, PORCUPINE, ONT.

39662—Bread supplied crew of steam shovel, June 24th, 1912	$2 04	
		$2 04

OFFICIAL LABOR DAY SOUVENIR AND PROGRAMME, TORONTO, ONT.

41458—For advertising in Official Labor Day Souvenir and Programme, 1913	$15 00	
		$15 00

P. O'BRIEN, COCHRANE, ONT.

36604—Loss, pack sack and contents, burnt at Cochrane, account wreck	$30 00	
		$30 00

D. O'Connor, Connaught, Ont.

40469—Telegraph poles	$220 31	
42000—Telegraph poles	29 69	
42000—Telegraph poles	8 00	
43103*a*—Fence posts and telegraph poles	198 05	
43103—Telegraph poles	4 20	
		$460 25

Ontario Labor Laws, Toronto, Ont.

37685—Advertisement, "Ontario Labor Laws," 1913 edition	$25 00	
		$25 00

The O'Brien Mines, Ltd., Cobalt, Ont.

38756—Settlement of claim No. 6123	$194 60	
		$194 60

Ontario Lantern & Lamp Co., Hamilton, Ont.

42256—Lantern (sample)	$0 65	
		$0 65

E. D. Osborne, Arnprior, Ont.

42529—Overcharge in weight on hay, claim No. 6902	$49 44	
		$49 44

O'Brien McDougall & O'Gorman, Hearst, Ont.

41666—Overcharge in rate, steam shovel, claim No. 6609	$11 00	
42527—Overcharge on coal, claim No. 7180	1 00	
42733—Overcharge in rate, seven dead engines, claim No. 5936	2,096 10	
42650—Refund of charges collected twice, claim No. 7288	3 66	
42724—Shortage butter from two boxes damaged in transit, claim No. 7064	2 48	
		$2,114 24

Oscala Northern R. R., Oscala, Fla.

43360—Car repairs, October, 1913	$2 46	
		$2 46

Page Hersey Iron & Tube Co., Ltd., Toronto, Ont.

38593—Black pipe	$113 64	
37634—Black pipe	70 76	
37918—2" galvanized pipe	73 23	
39527—Black pipe	93 42	
40103—Pipe (black)	98 67	
38856— "	84 11	
39888— "	74 50	
41165— "	14 02	
40492— "	117 79	
41900— "	61 95	
42216— "	103 99	
43133—5"x7" couplings	5 73	
43338—Pipe (black)	14 50	
		$926 31

Pilkington Bros., Ltd., Toronto, Ont.

37624—Plates of glass	$208 06	
38799— "	56 23	
37920— "	110 40	
40109— "	102 26	
39428— "	93 49	
41055— "	38 90	

PILKINGTON BROS., LTD., TORONTO, ONT.—*Continued.*

41163—Plates of glass	$99 45	
40286— "	30 43	
41150— "	37 93	
41949—Mirrors, etc.	7 90	
41902—Plates of glass	10 46	
42212— "	41 45	
43135— "	115 98	
43479— "	17 79	
43798— "	4 39	
		$975 12

THE N. P. PIPER RAILWAY SUPPLY CO., LTD., TORONTO. ONT.

38175—Metal polish	$88 50	
37628—Supplies as per statement attached to voucher	265 52	
39421—Supplies as per statement attached to voucher	223 43	
38166—Lamp fonts, burners, etc.	120 00	
40377—Supplies as per statement attached to voucher	120 25	
39886—Lamp burners, pails, wringers, etc.	190 47	
40993—Tank, sundries and oil cans	102 94	
42221—Supplies as per statement attached to voucher	232 85	
42462—Copper lens, clamps for marker, lamps, etc.	142 45	
43391—Globes, lanterns, burners	21 05	
43516—Lamp burners	8 40	
		$1,515 86

PYLE NATIONAL ELECTRIC HEADLIGHT CO., CHICAGO, ILL.

38164—Carbons, headlight supplies	$76 88	
39724—Carbons	15 00	
40496—Clutches	2 50	
41072—Electric fittings	61 36	
42464—⅝"x12" copper-coated carbons	15 00	
		$170 74

PHILADELPHIA & READING RAILROAD, PHILADELPHIA, PA.

38349—Car service balance, October, 1912	$33 60	
38469—Car repairs, September, 1912	3 44	
37044—Car repairs, September–October, 1912	9 26	
37268—Car service balance, November, 1912	19 40	
39077—Car repairs, October and November, 1912	4 35	
39217—Car service balance, December, 1912	16 80	
38488—Car repairs	1 16	
38632—Car service balance, January, 1913	10 90	
40451—Car repairs, November, 1912–January, 1913	98	
39346—Car service balance, March, 1913	43 35	
40088—Car repairs, January and February, 1913	29 27	
40804—Car service balance, April, 1913	42 00	
41657—Car repairs, audit No. 4157	34	
42065—Car service balance, May, 1913	7 20	
42925—Car service balance, July, 1913	25 05	
42424—Car repairs, bill No. 5095, June	2 29	
43016—Car service balance, August, 1913	17 55	
43486—Car repairs, June and July, 1913	3 80	
		$270 74

PITTSBURG & LAKE ERIE RAILROAD, PITTSBURG, PA.

37915—Ticket balance, September, 1912	$2 95	
38407—Ticket balance, September, 1912	2 95	
38467—Ticket balance, audit No. 10154, dept. 3820	2 41	
38636—Ticket balance, January, 1913	5 10	
40964—Car repairs, February, 1913	67	
		$14 08

PITTSBURG, SHAWMUT & NORTHERN RAILWAY, ST. MARY'S, PA.

38353—Car service balance, October, 1912		$129 15	
37272— " November, 1912		43 05	
39221— " December, 1912		13 65	
38638— " January, 1913		6 30	
39350— " March, 1913		19 80	
40808— " April, 1913		4 50	
42069— " May, 1913		5 85	
41832— " June, 1913		7 65	
			$229 95

PENNSYLVANIA RAILROAD CO., PHILADELPHIA, PA.

37687—Car service balance, October, 1912	$346 15	
38525—Car repairs, Nos. 83-27-2-60, September and October	47 94	
37046—Car repairs, September, 1912, No. 2/1474	1 53	
37048—Car repairs, September, 1912, No. 83/6654	38 28	
37274—Car service balance, November, 1912	413 90	
37472—Car repairs, October, bill No. 7592	10 51	
39223—Car service balance, December, 1912	598 65	
39345—Car repairs, July to September, bills No. 2-60-83	16 07	
38490—Car repairs, bills No. 60/8344-2/4210	12 96	
38640—Car service balance, January, 1913	828 70	
38716—Ticket sales	4 65	
39424—Car repairs, February and March, 1913	3 88	
39450—Car service balance, March, 1913	893 05	
41133—Car repairs, January and February, 1913	14 40	
40250—Car service balance, April, 1913	460 10	
40896—Car repairs, bill 27/6836	2 06	
40898—Car repairs, Nov. 30th, 1912–Feb. and March, 1913	34 95	
41649—Car repairs, audit No. 27/7483	12 00	
42071—Car service balance, May, 1913	156 65	
41834—Car service balance, June, 1913	189 55	
42927—Car service balance, July, 1913	267 00	
42414—Car repairs, bill No. 60/591	4 29	
42416—Car repairs, Bill No. 27/8069	9 15	
42418—Car repairs, bill No. 2/1667	79 77	
43295—Car repairs, May and June, 1913, bill No. 2/2609	65 46	
43018—Car service balance, September, 1913	207 00	
43550—Car repairs, June and September, 1913	6 99	
43300—Car service balance, September, 1913	46 02	
		$4,771 66

PIPE & PRESLEY, COBALT, ONT.

38758—Sugar lost in transit, claim No. 6375	$0 83	
38760—Loss, one box Snap in transit and freight charges, claim No. 5800	3 83	
42726—Loss syrup, claim No. 7412	75	
		$5 41

J. PERKINS & CO., COCHRANE, ONT.

39915—Loss, one box hardware, account shortage, claim No. 5803.	$4 48	
		$4 48

E. PETERS, EARLTON, ONT.

41326—Donation *re* cow alleged killed	$20 00	
		$20 00

J. POLONI, COBALT, ONT.

39913—Loss account, two bottles wine broken, claim No. 6353....	$1 85	
		$1 85

A. L. Perkins & Co., Ont.

38173—Vegetables, October and November, 1912	$35 59	
		$35 59

The Pullman Co., Chicago, Ill.

37789—Refund, T. & N. O., proportion of ticket sales, bill No. 61364	$53 00	
40783—Refund, T. & N. O., proportion of ticket sales, bill No. 65140	4 40	
42836—Service car "Iolanthe"	222 21	
		$299 61

Pere Marquette Railroad, Detroit, Mich.

38351—Car service balance, October, 1912	$19 25	
38471—Car repairs, audit No. R 908	297 54	
38523—Car repairs, audit No. R 618	8 00	
37042—Car repairs, August, 1912, reg. No. R 826, October, 1912	6 68	
37270—Car service balance, November, 1912	21 35	
39071—Car repairs, September and October, 1912	59 66	
39219—Car service balance, December, 1912	46 55	
38634—Car service balance, January, 1913	21 60	
38706—Ticket balance	40	
39348—Car service balance, March, 1913	17 35	
40806—Car service balance, April, 1913	21 50	
41655—Car repairs, audit No. R 626, May, 1913	24 57	
41324—Car repairs, January 2nd, 1912, to January 19th, 1913	14 63	
42067—Car service balance, May, 1913	3 90	
42420—Car repairs, bill No. R 689	19 64	
		$582 62

Thomas Pink Company, Pembroke, Ont.

39426—4½" Peaveys	$11 69	
42261—5" Peaveys	24 30	
		$35 99

A. J. Parr, General Freight and Passenger Agent, North Bay, Ont.

37739—Travelling expenses, November, 1912	$15 50	
36772— " " December, 1912	24 70	
38833— " " January, 1913	50 08	
38000— " " February, 1913	16 00	
40029— " " March, 1913	32 00	
39152— " " April, 1913	30 50	
40821— " " May, 1913	56 25	
41707— " " June, 1913	15 60	
42361— " " July, 1913	18 75	
42563— " " August, 1913	38 95	
43511— " " September, 1913	15 75	
43442— " " October, 1913	22 85	
		$336 93

Thomas Passmore, North Bay, Ont.

38029—Meats supplied, months of October and November, 1912	$384 86
37108—Meats supplied, month of December, 1912, for commissary	32 04
37630—Meats supplied, month of November, 1912, for commissary	328 81
39417—Meats supplied, month of December, 1912 for commissary	275 51
39525—Meats supplied, month of February, 1913, for commissary	324 71
38162—Meats supplied, months of January and February, 1913.	227 30
40379—Meats supplied, months of February and March, 1913	175 95
40315—Meats supplied, months of October, 1912, and February, 1913	19 31
41135—Meats supplied, month of April, 1913	164 89
41197—Meats supplied, month of May, 1913	214 35
41301—Meats supplied, month of May, 1913	318 40

THOMAS PASSMORE, NORTH BAY, ONT.—*Continued.*

40346—Meat supplied, June, 1913	$22 93	
43481—Meat supplied, September, 1913	39 68	
43422—Meat supplied, August, 1913	35 43	
43682—Meat supplied, June and July, 1913	26 39	
		$2,590 56

H. PETERS, TORONTO, ONT.

39715—Loss vegetables, account damage, claim No. 6121	$7 50	
38762—Loss, potatoes damaged, claim No. 6253	1 50	
38994—Overcharge in weight, potatoes, claim No. 6160	13 04	
41377—Overcharge in weight, apples, claim No. 6159	10 26	
41443—Overcharge in rate, fruit and vegetables, claim No. 6161	9 16	
42973—Damage to fruit by frost in transit, claim No. 6941	75 00	
		$116 46

JNO. G. PLATT, PORCUPINE, ONT.

37867—Cost repairs to tool chest, damaged at Schumacher, September 8th, 1913	$6 75	
		$6 75

PRESTON CAR & COACH CO., LTD., PRESTON, ONT.

38789—Two vestibuled interurban combination smoker motor cars	$16,814 00	
41137—Oak mouldings	10 39	
41068—Panel design	5 50	
		$16,829 89

PITTSBURG METER CO., EAST PITTSBURG, PA.

40494—Train plate and pinion	$0 62	
43518—Meter repairs	3 61	
		$4 23

PACIFIC FRUIT EXPRESS, OMAHA, NEBRASKA.

38355—Car service balance, October, 1912	$9 21	
37276— " " November, 1912	3 21	
39225— " " December, 1912	4 57	
38642— " " January, 1913	4 67	
39352— " " March, 1913	5 49	
40248— " " April, 1913	1 54	
42073— " " May, 1913	2 32	
41836— " " June, 1913	4 21	
42929— " " July, 1913	5 14	
		$40 36

WILLIAM POLLOCK & SONS, TORONTO, ONT.

40111—Spruce	$60 00	
43065—Spruce	283 05	
43186—Spruce	215 64	
		$558 69

R. PARKER, UNO PARK, ONT.

37126—Loading poles	$7 40	
		$7 40

PRESCOTT EMERY WHEEL CO., PRESCOTT, ONT.

38414—Emery	$2 90	
40105—Emery wheels	3 61	
		$6 51

P. & M. Co., Ltd., Chicago., Ill.

38181—P. & M. rail anchors	$142 50	
		$142 50

Pintsch Compressing Co., New York, N.Y.

37965—Gas delivered to cars, October, 1912	$210 03	
36994— " " November, 1912	188 72	
38060— " " January, 1913	201 99	
38362— " " December, 1912	212 82	
38412— " " February, 1913	189 93	
40558— " " March, 1913	194 77	
41032— " " May, 1913	182 90	
41867— " " April, 1913	203 31	
41482— " " June, 1913	186 04	
43137— " " July, 1913	252 65	
43371— " " August, 1913	226 38	
43566— " " September, 1913	210 13	
		$2,459 67

Peerless Carbon & Ribbon Co., Toronto, Ont.

41070—Carbon paper	$3 00	
43670— "	1 50	
		$4 50

Chas. Potter, Toronto, Ont.

36930—Thermometer	$0 70	
		$ 70

James Palangio, North Bay, Ont.

42677—Shortage bag flour, with connections, claim No. 7030	$2 73	
42679—Shortage two boxes macaroni, claim No. 7029	3 30	
		$6 03

H. Picard, North Bay, Ont.

38723—Supplies furnished for tool car	$2 12	
39001—Groceries supplied auxiliary car, month of Feb., 1913	23 73	
39510—Supplies furnished boarding cars, March, 1913	5 00	
41352—Bread and provisions	5 94	
		$36 79

Porter & Co., Elk Lake, Ont.

37963—Supplies, potatoes, sugar, etc.	$5 50	
37110—One bag potatoes	2 00	
38062—Oil for heaters in refrigerator car	1 50	
38764—Loss sugar, account damage to bag, claim No. 6351	79	
38990—Loss on bag of oats and freight charges, claim No. 6352.	1 80	
38992—Loss account damage to stove in transit, claim No. 6148	3 75	
40313—Supplies furnished, Jan. and Feb., 1913, surveyors	30 80	
39512—Supplies for surveying party	27 43	
40601—Loss on one bag oats and freight charges	1 83	
41375—Loss eggs, broken, claim No. 6873	5 64	
41670—Shortage, one box cheese and freight charges, claim 6404	12 60	
		$93 64

E. Proctor, McCool, Ont.

42000—Ties	$25 42	
		$25 42

THE PLANET, CHATHAM, ONT.

38177—Printing forms	$207 00	
38623— " "	76 10	
37636— " "	108 61	
39419— " "	4 25	
38308— " "	57 08	
38416— " "	26 00	
40375—Printing forms as per statement	202 58	
39722— " "	40 78	
39792— " "	94 50	
40763— " "	46 05	
43353—Books	22 00	
		$884 95

JOSEPH PERRAULT, MATHESON, ONT.

40100—Ties	$38 82	
40100*a*—Switch sets	134 38	
40100*a*—Switch sets	33 60	
		$206 80

P. PICARD, LINEMAN, NORTH BAY, ONT.

37847—Travelling expenses, November, 1912	$7 10	
36878— " " December, 1912	2 30	
38002— " " January and February, 1913	8 00	
40031— " " March, 1913	7 75	
39838— " " April, 1913	4 60	
41099— " " May, 1913	7 85	
41242— " " June, 1913	10 10	
42032— " " July, 1913	8 15	
42298— " " August, 1913	3 85	
43116— " " September, 1913	6 00	
		$65 70

PITTSBURG, CINCINNATI, CHICAGO & ST. LOUIS RAILWAY, PITTSBURG, PA.

37052—Car repairs, July and August, 1912, bill No. 73651	$13 74	
39075— " May, 1912, bill Nos. 74380-4880	1 20	
40004— " Nov. and Dec., 1912, bill Nos. 76189-77078	7 08	
40900— " Sept. and Oct., 1912, and Jan. and Mar., 1913	16 71	
41659— " bill No. 98942	13 53	
42422— " bill No. 79835	55	
43235— " bill No.81779	2 78	
43293— " bill No. 80759	2 60	
43548— " bill No. 82696	98	
		$59 17

PENNSYLVANIA CO., PITTSBURG, PA.

37050—Car repairs, Sept. to Oct., 1912, bill No. 5173	$8 48	
39073—Repairs to cars, Sept. and Nov. 1912, bill No. 6744	129 02	
40006— " Dec., 1912, and Jan., 1913, bill Nos. 10215-11923	4 47	
40962— " Oct. and Feb., 1913, bill No. 992	50	
40894— " Nov. 13th, 1912, Feb. and March, 1913	2 52	
41651— " June, 1913	5 22	
42426— " May, bill No. 17034	6 86	
42428— " May, bill No. 17294	31	
43233— " May, bill No. 20412	70	
43291— " May, bill Nos. 18961-18696	6 52	
43552— " Sept., 1913	5 19	
		$169 79

THE PANTASOTE CO., NEW YORK, N.Y.

40765—Pantasote	$129 95	
41978— "	50 72	
		$180 67

G. E. PALMER, TOWNSITE DEPT., ENGLEHART, ONT.

38831—Travelling expenses, January, 1913	$10 80	
38004— " " February, 1913	8 95	
40057— " " March, 1913	11 30	
39154— " " April, 1913	8 65	
40819— " " May, 1913	8 55	
41705— " " June, 1913	16 80	
42359— " " July, 1913	11 75	
42030— " " August, 1913	16 95	
		$93 75

PITTSBURG & MOON RUN RAILROAD, PITTSBURG, PA.

41838—Car service, balance, June, 1913	$2 10	
		$2 10

WM. POTTER & SON, TOTTENHAM, ONT.

38625—Refund of difference between amount deposited and cost of construction of siding at M.P. 130¾	$19 95	
41548—Shortage one bag onions, claim No. 6831	1 25	
42673—Shortage one bag coal in transit, claim No. 6823	1 60	
		$22 80

E. F. PULLEN, COCHRANE, ONT.

38627—Refund of difference between amount deposited and cost of construction of siding at M. P. 3¼, Porcupine branch	$28 34	
39575—Siding rebate, September, 1912, claim No. 6521	14 00	
39577—Siding rebate, October, 1912, claim No. 6520	16 00	
39579—Siding rebate, November, 1912, claim No. 6522	18 00	
39633—Overcharge in weight, nickel ore, claim No. 6376	10 21	
38996—Siding rebate, Alexo Mine siding, Feb. and Mar., 1913, claim No. 6697	32 00	
40599—Siding rebate, Alexo Mine siding, August, 1912, claim No. 5940	12 00	
42531—Siding rebate, July, 1913, claim No. 7282	36 00	
42675—Siding rebate, Alexo Mine siding, June, 1913	24 00	
42654—Settlement of claim Nos. 6092-1	21 61	
		$212 16

POWER SPECIALTY CO.

39423—Valves and springs	$26 40	
39890—Valves and springs	69 00	
43736—Valves and springs	51 30	
		$146 70

PITTSBURG SPRING & STEELE CO., PITTSBURG, PA.

43734—Springs	$144 59	
		$144 59

G. G. PAYNE, ENGINEERING DEPT., COCHRANE, ONT.

37845—Travelling expenses, November, 1912	$3 30	
38961— " " January, 1913	2 95	
37998— " " February, 1913	2 25	
40222— " " May, 1913	9 45	
42034— " " June and July, 1913	4 75	
43091— " " August, 1913	5 00	
		$27 70

GEO. R. PROWSE RANGE CO., MONTREAL, QUE.

38179—Copper boilers for ranges in cafe cars	$40 00	
		$40 00

PROVINCIAL Y.M.C.A., TORONTO, ONT.

38691—Donation	$100 00	
		$100 00

H. W. PETRIE, LTD., TORONTO, ONT.

41195—Pump fittings	$16 00	
		$16 00

H. L. PIPER CO., LTD., MONTREAL, QUE.

37626—Castings	$156 00	
		$156 00

PEORIA & PEKIN UNION RAILWAY CO., PEORIA, ILL.

40086—Car repairs, bill No. 3632	$0 50	
41653—Car repairs, bill No. 5700	16 75	
		$17 25

THOMAS POTTER, EARLTON, ONT.

40107—Cedar	$176 51	
		$176 51

PORCUPINE STATION, PORCUPINE, ONT.

39206—Overcharge in weight, potatoes and hay, claim No. 6482..	$17 36	
		$17 36

A. B. PRATT, TORONTO, ONT.

37489—Salary, December, 1912	$150 00	
		$150 00

PHILADELPHIA, BALTIMORE & WASHINGTON R.R., PHILADELPHIA, PA.

41289—Car repairs, November, 1912, bill No. 136/1510	$1 60	
42412—Car repairs, bill No. 136/3057	86	
43484—Car repairs	14 68	
		$17 14

F. C. PRESTON, HAILEYBURY, ONT.

37619—Loss one crock of olives, broken in transit, claim No. 5698	$1 25	
37621—Overcharge biscuits, account double billing, claim No. 5643	3 93	
41771—Loss ¼ doz. bottles Queen olives, claim No. 6929	1 63	
42548—Loss five bottles olives, broken in transit, claim No. 6917	1 45	
		$8 26

PORCUPINE TELEPHONES LINES, LTD., SOUTH PORCUPINE, ONT.

38997—Six months' telephone service at Schumacker	$30 00	
38999—Six months' telephone service at Timmins	30 00	
41719—Twelve months' telephone service, South Porcupine	66 00	
41967—Six months' telephone service at Schumacher	30 00	
43005—Telephone, rental desk, telephone, Timmins, Aug. 5th to Feb. 5th, 1914	33 00	
		$189 00

J. Pacey, Charlton P.O.

40465—Ties	$125 40	
40020—Ties	72 60	
		$198 00

T. C. Patterson, Latchford, Ont.

39208—Claim, loss half barrel apples, damaged in transit, claim No. 6108	$1 89	
		$1 89

The Pedlar People, Ltd., Oshawa, Ont.

40729—Culverting	$1,140 12	
42437—Culverting	1,381 69	
42172—Culverting	894 95	
43067—Culverting	1,909 08	
43193—Culverting	1,272 72	
43184—Culverting	1,039 92	
		$7,638 48

G. Parker, North Bay, Ont.

40620—Expenses, May 19th to June 2nd, 1913	$12 00	
		$12 00

Pacific Coast Pipe Co., Ltd., Vancouver, B.C.

42435—Tank material	$530 00	
43477—Pipe	533 70	
		$1,063 70

M. S. Premaville, New Liskeard, Ont.

38163—Ties	$96 18	
		$96 18

Jas. H. Patterson, Ottawa, Ont.

38557—Right of way, Elk Lake branch, south ½ lot 4, con. 6, Township of Barber	$100 90	
		$100 90

T. J. Parsons, Toronto, Ont.

37632—Money remittance bags, No. 4	$2 50	
		$2 50

Pearce Meat Co., Ltd., North Bay, Ont.

38995—Meats	$7 03	
		$7 03

Chas. Platt, New Liskeard, Ont.

36810—Settlement of claim No. 5726, damage to paint	$1 28	
41445—Loss white lead, short, claim No. 6895	0 50	
42652—Settlement of claim No. 7350, damage to paint	0 65	
42728—Settlement of claim No. 7359, loss, paint damaged	0 35	
42730—Settlement of claim No. 7303, loss, burlap damaged	0 75	
		$3 53

Arthur Pequegnat Clock Co., Berlin, Ont.

42214—Clock	$4 50	
		$4 50

CHAS. PIERCE, TIMMINS, ONT.

39713—Shortage one case sad irons, claim No. 5921	$6 05	
		$6 05

OTTO PEARSON, GOLDLANDS, ONT.

41293—Ties	$553 41	
40418—Ties	290 79	
41971—Ties	247 23	
		$1,091 43

PRESSED PRISM PLATE GLASS CO., CHICAGO, ILL.

41190—Plate glass	$24 00	
		$24 00

PHOTO ENGRAVERS, LIMITED, TORONTO, ONT.

36928—Halftone portrait	$6 00	
		$6 00

O. PERRON, TEMAGAMI, ONT.

42957—Donation *re* cow alleged killed, May 18th, 1913	$25 00	
		$25 00

T. J. PATTON, NORTH BAY, ONT.

41712—Commission sale of tickets, special train, excursion, Lounsbury Park, July 30th, 1913	$16 40	
		$16 40

J. PAWSON, NORTH BAY, ONT.

42983—Account unclaimed wages, January, 1913	$38 13	
		$38 13

PENN CANADIAN MINES, LTD., COBALT, ONT.

42658—Settlement of claim No. 6946, overcharge in weight and rate on silver ore	$57 74	
		$57 74

J. T. PRICE, NORTH BAY, ONT.

42713—Travelling expenses, August, 1913	$14 00	
		$14 00

MRS. W. POLLARD, POTTSVILLE, ONT.

42656—Settlement of claim No. 7205	$3 35	
		$3 35

QUEBEC, MONTREAL AND SOUTHERN RY., ALBANY, N.Y.

38357—Car service, balance, October, 1912	$14 00	
38473—Car repairs, August and September, 1912, bill No. 3756...	6 85	
37278—Car service, balance, November, 1912	2 80	
39227—Car service, balance, December, 1912	1 40	
38644—Car service, balance, January, 1913	6 30	
39452—Car service, balance, March, 1913	13 05	
40810—Car service, balance, April, 1913	7 20	
40902—Car repairs, No. 4534	1 43	
42075—Car service, balance, May, 1913	4 50	
41840—Car service, balance, June, 1913	6 75	
43020—Car service, balance, September, 1913	10 35	
43488—Car repairs, August and September, 1913	4 43	
		$79 06

QUEBEC & LAKE ST. JOHN RY., TORONTO, ONT.

37280—Car service, balance, November, 1912	$2 80	
39229—Car service, balance, December, 1912	1 40	
43022—Car service, balance, September, 1913	4 05	
		$8 25

QUEBEC CENTRAL RY., SHERBROOKE, QUE.

38646—Car service, balance, January, 1913	$4 50	
39354—Car service, balance, March, 1913	9 00	
41842—Car service, balance, June, 1913	1 20	
		$14 70

QUEEN VICTORIA MEMORIAL HOSPITAL, NORTH BAY, ONT.

41354—Hospital attendance, alleged injury, Olen Kexrisne	$14 00	
42754—For donation	200 00	
		$214 00

W. J. QUINN, COCHRANE, ONT.

40603—Less account shortage and damage to sox in transit	$15 00	
		$15 00

RICE LEWIS & SON. LTD., TORONTO, ONT.

38155—Augers, wire cutters, etc.	$9 45	
37642—Rivets, glass cutters and dies	16 01	
38168—Glass cutter parts, clamps, wrenches	38 61	
40121—Casters, pipe cutter wheels	1 81	
39732—Grindstones	90 00	
39980—Rasps and pliers	5 80	
40995—Cutter, wrench	0 97	
41201—Shears	1 99	
41203—Oil stove and slips	2 55	
40498—Washer, gromets	1 05	
41078—Whetstones, pliers and vises	22 34	
41192—Level glasses, augers	29 69	
41486—Electric fan	14 60	
42263—12 in. direct current fans	29 20	
42265—Glass cutters and vises	17 20	
41904—Knives	2 20	
42128—Knives and forks, steel pike	3 15	
43395—Augers, bits, scythe stones	17 16	
43559—Planes, axle pulleys	2 60	
43170—Door checks	34 80	
43524—Wrenches	6 66	
		$347 84

J. W. RICHARDSON, NORTH BAY, ONT.

37791—Hardware supplies	$30 51
38031—Rings, hooks and poles	0 67
37370—Alabastine and brushes	13 34
38801—Tinware	5 87
37922—Dippers and grinder, casting	4 09
39285—Castings and camp stove	17 35
39529—Hardware	6 14
40119—Alabastine, camp stove and rope eyes	10 85
38858—Meat grinder, steel and mirrors	4 27
40317—Snowshoes	4 25
39544—Stove and hardware	32 33
39892—Mirrors, axes, etc.	1 16
40799—Castings	12 03
40801—Hardware, May 13th, 1913	16 83
40624—Axe and handles, bread pan	2 57
41152—Packing needles, egg beater, funnel	23 24
41306—Alabastine	2 25

J. W. Richardson.—*Continued.*

41951—Hardware	$32 90	
42455—Castings	9 95	
43357—Hardware	10 04	
43373—Difference in price of old horseshoes	1 15	
43483—Hardware	27 21	
42796—Padlocks	6 79	
43190—Knives	2 50	
43340—Hammer handles	1 65	
43742—Alabastine	2 50	
		$282 44

Reamsbottom & Edwards, Porcupine, Ont.

37623—Overcharge in weight on lumber, claim No. 5057	$15 49	
39679—Overcharge in weight on potatoes, claim No. 5535	24 88	
39516—Rubber boots and socks	17 00	
		$57 37

"Railway and Marine World," Toronto, Ont.

37967—Copies of "Railway and Marine World," December, 1912.	$3 75	
		$3 75

Adolphe Rochfort, Astorville, Ont.

38824—Refund, account potatoes refused and sold by agent, North Cobalt, claim No. 6564	$3 57	
		$3 57

James Redpath, New Liskeard, Ont.

40605—Loss, one clock and freight charges, claim No. 6434	$4 55	
		$4 55

Patrick Rodgers, Charlton, Ont.

40098—Ties	$25 50	
		$25 50

M. Rothschild, Cochrane, Ont.

38894—Loss, 16 lbs. jam, claim No. 6304, C.P.R., No. F-194114.G.	$1 31	
42533—Loss, four bottles liquor in transit, claim No. 7161	2 76	
42552—Settlement of claim No. 7162	2 59	
		$6 66

Roach & Moore, McCool P.O.

40020 —Ties	$228 02	
43240*a*—Ties	76 00	
		$304 02

J. Reise, Goldlands, Ont.

40100*a*—Ties	$38 88	
40418 — "	45 06	
43240 — "	12 96	
		$96 90

Remington Typewriter Co., Ltd., Toronto, Ont.

36934—Note books, carbon paper, inspection of Monarchs, claim Nos. 55826-52172	$14 25	
36996—Repairs to Monarch typewriter, claim No. 3B/75087, and parts for same	16 65	
37854—Inspection of Monarchs, Nos. 55826 and 72172	2 00	
40319—Repairing Remington, No. 10a/40187, and parts for same	10 75	

REMINGTON TYPEWRITER CO.—*Continued.*

40321—March inspection of Monarchs, Nos. 3/55826 and 52172....	$2 00	
19466—Inspection of Monarchs, Nos. 2/52172-3D/55826	4 50	
39468—Inspection of Monarchs, Nos. 2/52172-3D/55826	2 00	
40785—Carbon paper	20 00	
40560—Inspection of Monarch machines, 2/52172-3e/55826	2 00	
41026— " " " " 3B/55826-2B52172, ...	2 00	
41484— " " " " 3c/55826-2/52172	2 00	
42060— " " " " 3c/55826	1 00	
42580— " " " " 3c/55826	1 00	
42812—Carbon paper	3 00	
		$83 15

A. C. RORABECK, NORTH BAY, ONT.

38187—Rat poison	$0 25	
37638—Ammonia water	4 50	
38170—Salts	20	
40117—Bottles and corks	1 30	
39728—Drugs, cream of tartar, etc.	2 70	
39730—Ammonia	4 50	
43393—Chemicals	1 20	
43520—Drugs	8 05	
43740—Vaseline	25	
		$22 95

RUTLAND RAILWAY, NEW YORK, N.Y.

38409—Ticket balance, October, 1912	$18 72	
37282—Car service, balance, November, 1912	3 50	
37336—Ticket balance, November, 1912	32 16	
37474—Car repairs, bill No. 93940	3 35	
39273—Ticket balance, December, 1912	41 55	
38708—Ticket balance, January, 1913	18 89	
40453—Car repairs, January, 1913	44	
39356—Car service, balance, March, 1913	1 20	
39394—Ticket balance, March, 1913	28 23	
41866—Ticket balance, June, 1913	4 56	
42951—Ticket balance, July, 1913	9 02	
43024—Car service, September, 1913	5 40	
43052—Ticket balance, September, 1913	13 53	
43490—Car repairs, August, 1913	1 76	
		$182 31

ROUS & MANN, TORONTO, ONT.

37689—Folders, " B," 10 pages, folded three times	$32 00	
37691—Folders, " B," 10 pages, folded three times	33 00	
37693—Circular letters *re* trip passes	5 25	
38773—Memo slips printed and padded	3 00	
38775—Folders	175 00	
40501—Engraving of map	11 50	
40663—Folders	68 00	
41174—" B " folders	36 00	
41953—" B " folders and covers	209 00	
42062—Special envelopes	12 50	
		$585 25

RICHMOND, FREDERICKSBURG & POTOMAC RAILROAD, RICHMOND, VA.

38648—Car service, balance, January, 1913	$4 50	
40812—Car service, balance, April, 1913	4 50	
42430—Car repairs, bill No. 5329	1 29	
		$10 29

G. B. Richardson, Widdifield, Ont.

38163—Ties	$59 64	
		$59 64

Thos. Robertson & Co., Ltd., Toronto, Ont.

39430—Car parts	$9 65	
41519—Enameled iron sink	7 74	
42218—Sinks	17 97	
		$35 36

Railway Equipment & Publishing Co., New York, N.Y.

37406—Subscription, Railway Line clearances, Jan., 1913, to Oct. 1913	$1 00	
38777—Registration of rolling stock equipment, Jan. to Dec., 1913	84 50	
		$85 50

"Railroad Age Gazette," New York, N.Y.

38429—Five subscriptions, "Monthly Engineering Edition," to Dec. 31st, 1913	$5 00	
39097—Subscription, one year to March 31st, 1914	6 00	
40113—Subscription, Dec. 31st, 1913	6 00	
39664—Subscription, one year, to May 31st, 1914	6 00	
		$23 00

H. L. Rodgers, Master Mechanic's Dept., North Bay, Ont.

37356—Travelling expenses, month of December, 1912	$14 50	
39156— " " " March, 1913	20 53	
39840— " " " April, 1913	41 05	
40622— " " " May, 1913	31 00	
41721— " " " June, 1913	60 70	
		$167 78

Revillion Bros., Ltd., Matheson, Ont.

36798—Ties	$3 00	
40661—Supplies furnished, month of April, 1913	13 75	
		$16 75

James Robertson Co., Ltd., Montreal, Que.

38185—Plumbers' chain	$4 50	
37640—White enamelled sink	7 85	
39425—Russia iron	17 99	
39726—Steel plates	17 35	
40951—Steel	48 42	
41199—Telegraph handles	17 40	
40288—Lap plates	25 52	
41076 "	39 69	
42267—Plates, steel and fittings	107 59	
42457— " "	85 56	
41980— " "	29 28	
42466— " "	294 70	
42468—Fittings	93 75	
43485—Steel plates	49 97	
43188—Iron	21 58	
43522—Steel	42 59	
		$903 74

"Railway and Locomotive Engineering, New York, N.Y.

39514—Subscription from Nov., 1912, to Oct., 1913	$2 00	
40887—Subscription, Aug., 1912, to July, 1913	2 00	
		$4 00

RAND AVERY SUPPLY CO., BOSTON, MASS.

38183—Ticket punches	$30 00	
40767—Ticket punches	15 00	
		$45 00

RARITAN RIVER RAILROAD, JERSEY CITY, N.Y.

42010—Refund, remittance received in error, Per Diem Report, May, 1913	$1 75	
		$1 75

JOHN RANSFORD, CLINTON, ONT.

38559—Salt	$150 00	
		$150 00

READING CAMP ASSOCIATION, TORONTO, ONT.

38637—Donation	$10 00	
		$10 00

S. H. RYAN, TRAINMASTER, NORTH BAY, ONT.

37741—Travelling expenses, month of November, 1912	$18 30	
36774— " " " December, 1912	17 95	
38835— " " " January, 1913	21 50	
37856— " " " February, 1913	20 75	
40035— " " " March, 1913	19 75	
40224— " " " April, 1913	13 10	
39158— " " " May, 1913	9 40	
41024— " " " June, 1913	17 30	
42395— " " " July, 1913	26 70	
42036— " " " August, 1913	28 10	
43585— " " " September, 1913	14 45	
43588— " " " October, 1913	22 30	
		$229 60

THE RAILWAY STOREKEEPER, CLEVELAND, OHIO.

40115—Subscription to *The Railway Storekeeper* to June, 1913	$3 00	
		$3 00

RUSSELL CAR & SNOW PLOW CO., RIDGEWAY, PENN.

43738—Repair parts	$30 00	
		$30 00

JNO. ROBERTSON & SON, LTD., MONTREAL, QUE.

37722—Loss, one bottle whiskey, claim No. 6115	$0 76	
		$0 76

P. A. ROBBINS, TIMMINS, ONT.

39058—Fee and expenses *re* Cobalt Lake arbitration	$534 70	
		$534 70

T. ROSS, (MASTER MECHANIC), NORTH BAY, ONT.

37849—Travelling expenses, month of November, 1912	$5 50	
40033— " " January and February, 1913	10 00	
43583— " " July and August, 1913	8 10	
		$23 60

RAIL JOINT COMPANY OF CANADA, NEW YORK CITY, N.Y.

41139—Rail joints	$6,471 56	
43192— " "	1,557 00	
		$8,028 56

ETHEL ROACH, STENOGRAPHER, COBALT, ONT.

.....—Services rendered Commission, November, 1912	$65 00		
37499— " " " December, 1912	65 00		
36566— " " " January, 1913	65 00		
38661— " " " February, 1913	65 00		
37884— " " " March, 1913	65 00		
39823— " " " April, 1913	65 00		
39106— " " " May, 1913	65 00		
40124— " " " June, 1913	65 00		
41415— " " " July, 1913	65 00		
41450— " " " August, 1913	65 00		
42603— " " " September 1st, 26th, 1913..	56 33		
			$706 33

CHAS. RECKIN & SON, COBALT.

38896—Overcharge in weight, hay, claim No. 6245	$4 00	
		$4 00

RADCLIFFE PAPER CO., LTD., TORONTO.

39963—Twine	$5 10	
39606— "	15 99	
41080— "	11 20	
42156— "	4 26	
43684— "	7 92	
		$44 47

E. ROZELL, McCOOL P.O. ONT.

40098—Fence posts	$37 60	
		$37 60

ROCKWELL, BARNES CO., CHICAGO, ILL.

41968—Tissues	$29 70	
43355—Paper	38 50	
		$68 20

REID, NEWFOUNDLAND CO., ST. JOHN'S, NFLD.

42949—Ticket balance, July, 1913	$1 30	
		$1 30

WM. ROBERTSON & CO., CHICAGO, ILL.

40731—Repair parts	$51 49	
		$51 49

JAMES B. REED, M.D., KELSO, ONT.

38771—Medical services to N. Miller, at Kilburn, Sept. 5th, alleged injury	$15 00	
		$15 00

S. RODGERS, CHARLTON, ONT.

40020—Ties	$37 11	
		$37 11

W. RODGERS, CHARLTON, ONT.

36650—Ties	$6 60	
40020— "	57 27	
		$63 87

ALPHONSE RIVEST, NUSHKA, ONT.

40469—Ties	$96 97	
40100— "	66 30	
40100— "	32 33	
		$195 60

J. RACETTE, NUSHKA, ONT.

40469—Ties	$187 00	
40098— "	170 76	
41971— "	62 33	
		$420 09

RAILWAY GARDENING ASSOCIATION, SEWICKLEY, PA.

37112—Gardener, D. Kerrigan's Dues for year 1913	$2 00	$2 00

JOS. T. RYERSON & SON, CHICAGO, ILL.

38418—Flue cleaner, part	$32 00	
		$32 00

R. D. ROBERTSON, COBALT, ONT.

37535—Alleged overcharge in weight on potatoes, claim No. 5333..	$6 00	
		$6 00

ALEX. RONDEAU, SOUTH PORCUPINE, ONT.

36656—Claim, damage to barber chair, claim No. 5755	$5 00	
		$5 00

FRANK C. ROCK, SOUTH PORCUPINE, ONT.

37746—Overcharge in rate, household goods, claim No. 5367	$19 72	
		$19 72

BEN ROTHSCHILD, COCHRANE, ONT.

39240—50 per cent. refund on amount paid in rent, post-office, Cochrane	$75 00	
		$75 00

J. RUNGER, MATHESON, ONT.

40418—Ties	$39 74	
41971— "	13 24	
		$52 98

J. P. RANGER, NORTH TEMISKAMING, ONT.

41381—Loss, half dozen chair seats, claim No. 6552	$3 00	
41550—Damage to beans in transit, claim No. 6528	2 00	
		$5 00

J. S. RICHARDSON, COCHRANE, ONT.

41779—Damage to trunk, loss of hammer and rules therefrom....	$5 00	
		$5 00

ALBERT RYAN, COBALT, ONT.

41379—Loss, one leg of hog and part of ham, claim No. 6713	$3 60	
		$3 60

R. W. Rhodes, Matheson, Ont.

42550—Loss, one case pint jars, claim No. 6828	$1 00	
		$1 00

John Rowlandson, Iroquois Falls, Ont.

43007—Spikes, Teaming timber and plank	$18 00	
		$18 00

F. C. Richardson, Iroquois Falls, Ont.

43230—Meals supplied	$8 50	
		$8 50

Southam Press, Ltd., Toronto, Ont.

38033—Printing tariffs, Nos. 53, 54, 92, 93, 19	$66 25	
38195—Printing cards, trip passes	36 35	
36842—Form B-2, local excess checks, eyeletted and strung	31 25	
36936—Circular Nos. 101, 102, 104, 105, 106	18 75	
37116—Printing tariffs	19 00	
37410—Printing tariffs	35 75	
37654—Printing cards, passes, tickets, baggage checks	366 05	
38781—Conductors' duplex tickets	30 00	
38783—Time table and covers	114 50	
38785—Wall time tables	22 00	
38933—Tariffs F.D. No. 98, supp. A to F. D. No. 98	11 65	
39291—Tariffs F. D. No 99, supp. A. to F. D. No. 99, folders, etc	118 50	
39539—Printing passes	12 00	
38366—Printing supp. A. to F. D., 100, tariff F. F., 100, local freight tariff, No. 57	24 00	
39965—Printing supp. A. to Pulpwood tariff F. D. 94-95	81 00	
40323—Copies of supp. A. to F. D., 101 and tariff F. D., 101	40 50	
39666—One hundred copies Passenger tariff, No. 19	42 00	
39668—Printing tickets	16 25	
39670—Printing tickets	118 50	
39672—Printing card tickets, T. and N. O. points	9 65	
40667—Mileage books	30 00	
41001—Tickets	12 35	
41057—Tickets	85 00	
41059—Tickets	17 50	
40562—Fifty copies supplement A. to F. D., No. 102, copies tariff F. D., No. 102	11 00	
40564—No. 125 circulars (350 copies)	99 00	
41559—Circulars, No. 116-137-141, time tables, No. 27	95 90	
41176—Tariffs F. D. 104	8 00	
41178—Form 1, books and cards	20 80	
41330—Printing wall time table, June 29th, 1913	8 75	
41725—Copies of tariff, F. D. No. 105	12 00	
41488—Copies of tariff, F. D. No. 105	4 50	
41520—Copies of supplement 1 to local and joint commodity freight tariff No. 66, copies of folder "A"	51 00	
41716—Local and joint passenger tariff, No. 30	84 00	
41906—Tickets	20 90	
43071— "	14 00	
43195— "	82 90	
43567— "	6 10	
42806— "	175 00	
43746— "	52 50	
		$2,105 15

Santa Fe Refrigerator Despatch Co., Topeka, Kan.

38652—Car service balance, January, 1913	$2 32	
39360— " " March, 1913	85	
40816— " " April, 1913	2 07	
		$5 24

THE JAMES SMART MANUFACTURING CO., LTD., BROCKVILLE, ONT.

37928—Hammers	$6 37	
40123— "	6 37	
41961— "	3 96	
		$16 70

SAFETY CAR HEATING AND LIGHTING CO., NEW YORK, N.Y.

38159—Plug cocks, lighting material	$157 08	
37652—Heating and lighting parts	88 28	
39425—Lighting supplies	135 75	
40391—Bowls, clls and couplins	215 08	
41208—Pipe, fittings	26 20	
42269—Keys	2 34	
42463—Gas mantles	75 60	
42470—Lighting material	133 44	
43571—Fittings	17 70	
43526—Fittings	34 80	
43786—Repair parts	129 65	
		$1,015 92

STANDARD CHEMICAL CO., TORONTO, ONT.

38186—Charcoal	$19 40	
40502— "	17 53	
		$36 93

J. A. SIMMERS, TORONTO, ONT.

38420—Seeds	$24 53	
41215—Fertilizer	2 25	
41217—Spramoter	9 00	
		$35 78

ST. LOUIS AND SAN FRANCISCO RAILROAD, ST. LOUIS, MO.

37056—Car repairs, September and October, 1912	$7 22	
41303— " July, bill No. 97413	4 93	
42151— " May, bill No. 106255	14 83	
43237— " bills Nos. 4231-107872	29 71	
43554— " August and September, 1913	1 20	
39347— " audit No. 93019	7 84	
		$65 73

SOUTH BUFFALO RAILWAY CO., BUFFALO. N.Y.

38475—Car repairs, invoice, No. 696	$1 85	
37054— " July, 1912, invoice No. 5472	1 85	
38492— " invoice No. 58	1 98	
		$5 68

JOHN B. SMITH & SONS, TORONTO. ONT.

37803—Crossarms and lumber	$1,733 27	
37372—Crossarms and lumber	1,004 65	
38176—Lumber	69 81	
41063—Timber	894 56	
40348—Tank houses, shingles	1,697 59	
40500—Tank houses	1,123 00	
41638—Contract tank house	1,123 00	
42130—Crossarms	474 23	
43069—Crossarms	430 10	
		$8,550 21

SCLATER ASBESTOS CO., MONTREAL, QUE.

39066—Asbestos boards	$159 35	
		$159 35

SHURLY & DIETRICH, GALT, ONT.

38189—Saw and handles	$18 50	
37648—Saw handles	4 00	
38184—Saws and handles	45 00	
39434—Hand saws	12 74	
43346— "	10 17	
43530— "	4 23	
		$94 64

SOUTHAM, LIMITED, MONTREAL, QUE.

38174—Printing tickets	$11 70	
		$11 70

W. C. SEMPLE, EARLTON, ONT.

41007—Timber	$222 80	
		$222 80

SPEERS BROTHERS, GOWGANDA, ONT.

40259—Supplies furnished surveying party, February 25th, 1913	$18 86	
		$18 86

WM. J. SIROTHERS, NELLIE LAKE, ONT.

36630—Supplies furnished surveying party	$20 88	
39831—Board, B. Holbrooke	1 50	
		$22 38

STANDARD COUPLER CO., NEW YORK, N.Y.

38197—Name plates, B–6–1, B–6–5	$22 50	
39429—Name plates, B–6–4	12 00	
		$34 50

SMART, TURNER MACHINE CO., HAMILTON, ONT.

38193—Valve seats	$7 00	
39433—Chain wheel	8 00	
41213—Pump fittings	32 80	
		$47 80

ST. LOUIS SOUTH WESTERN RAILWAY OF TEXAS, TYLER, TEXAS.

38367—Car Service balance, October, 1912	$12 95	
37290— " " November, 1912	11 55	
39237— " " December, 1912	9 10	
38658— " " January, 1913	22 80	
40824— " " April, 1913	16 20	
43492—Car repairs, August, 1913	62	
43032—Car service balance, September, 1913	5 85	
		$79 07

SWIFT REFRIGERATOR LINE, CHICAGO, ILL.

38359—Car service balance, October, 1912	$3 73	
37284— " " November, 1912	1 62	
39231— " " December, 1912	3 44	
38650— " " January, 1913	6 34	

SWIFT REFRIGERATOR LINE.—*Continued.*

39358—Car service balance, March, 1913	$6 57		
40814— " " April, 1913	1 90		
42077— " " May, 1913	1 90		
41844— " " June, 1913	2 73		
42931— " " July, 1913	13 45		
43026— " " September, 1913	12 67		
		54 35	

STEPHENSON & SON, NEW LISKEARD, ONT.

40907—Advertisement, Cobalt station grounds	$8 10		
41757 " unsold Lots, Latchford Townsite	6 15		
		$14 25	

SHIPPERS REFRIGERATOR CAR CO., CHICAGO, ILL.

39239—Car service balance, December, 1912	$1 62		
		$1 62	

G. SHIELDS, CHARLTON, ONT.

40020—Ties	$210 56		
40020— "	89 71		
40020— "	11 70		
40100— "	70 18		
40100— "	29 90		
		$412 05	

SMITH'S FALLS MALLEABLE CASTINGS CO., LTD., SMITH'S FALLS, ONT.

37656—Castings	$18 85		
38180— "	8 45		
40383— "	128 45		
39734— "	11 05		
39894— "	5 40		
40733— "	41 35		
41205— "	22 55		
41084— "	89 23		
41206— "	49 15		
42311— "	23 75		
42459— "	6 20		
41984— "	4 10		
42472— "	16 80		
43401— "	5 45		
43528— "	10 60		
43784— "	2 05		
		$443 43	

SOUTHERN RAILWAY, WASHINGTON, D.C.

38361—Car service, balance, October, 1912	$18 05		
37286— " balance, November, 1912	26 95		
39233— " balance, December, 1912	2 45		
40455—Car repairs, April-November, 1912	8 37		
40818—Car service, balance, April, 1913	18 60		
41846— " balance, June, 1913	8 40		
42933— " balance, July, 1913	51 75		
43301—Car repairs, May, 1912, to June, 1913	84 06		
43028—Car service, balance, September, 1913	27 90		
		$246 53	

STEELE, BRIGGS SEED COMPANY, LTD., TORONTO, ONT.

39437—Greenhouse supplies	$4 10		
43563— "	3 50		
		$7 60	

W. H. Scroggie, Ltd., Montreal, Que.

38766—Loss one rug, short in transit, claim No. 6272	$2 85	
		$2 85

Seaboard Air Line, Portsmouth, Va.

38363—Car service, balance, October, 1912	$1 60	
39079—Car repairs, November, 1912	5 67	
38494— " bill No. 51761	21 47	
41305— " October, 1912, bill No. 56427	2 20	
40820—Car service, balance, April, 1913	2 85	
42079— " " May, 1913	17 95	
41848— " " June, 1913	2 80	
43030— " " July, 1913	0 45	
		$54 99

Southern Pacific Company, San Francisco. Cal.

38191—Car repairs, audit No. 180120	$52 37	
38365—Car service, balance, October, 1912	2 80	
39081—Repairs to cars, bill No. 193735	1 21	
38710—Ticket balance, January, 1913	21 51	
40457—Car repairs, May-October, 1912	28 77	
40010— " audit No. 200227-202512, Dec., 1912, Jan., 1913	10 53	
41141— " March, 1913, bill No. 206403	2 84	
40444— " April 17th and April 27th, 1913	8 02	
42432— " bill No. 213310, Nov., 1912, to June, 1913	2 78	
42434— " bill No. 211663	1 94	
43239— " bill No. 220841	0 44	
		$133 21

T. G. Snetsinger, New Liskeard, Ont.

36652—Loss syrup, claim No. 5580	$4 00	
		$4 00

W. Switzer, Relieving Agent, Latchford, Ont.

39021—Travelling expenses, January, 1913	$16 00	
38006— " February, 1913	3 00	
42397— " July, 1913	19 00	
42304— " August, 1913	9 95	
43609— " September, 1913	1 75	
		$49 70

H. R. Scott, Engineering Dept., North Bay, Ont.

37745—Travelling expenses, August, 1912, James Bay Exploration	$5 00	
38629—Travelling expenses, October and December, 1912, to January, 1913	15 28	
		$20 28

Edward Scott, Heaslip, Ont.

40100—Ties	$65 76	
		$65 76

A. J. B. Saumier, Swastika, Ont.

36614—Shortage one case biscuits, claim No. 6098	$2 81	
40607—Loss biscuits, pilfered, claim No. 6668	1 68	
		$4 49

Smart Bag Co., Ltd., Toronto, Ont.

37644—10½ oz. 72 in. Hessian	$29 88	
		$29 88

SHERWIN-WILLIAMS COMPANY, MONTREAL, QUE.

41209—Paint	$76 00	
41211— "	190 00	
40628— "	74 48	
41198— "	372 40	
43489— "	55 86	
43491— "	93 10	
		$861 84

STAR GROCERY, NORTH BAY, ONT.

36840—Supplies furnished private car "Temagami," month of November, 1912	$6 48	
37114—Supplies furnished private car "Sir James," month of December, 1912	24 16	
37408—Supplies furnished private car "Sir James," month of January, 1912	2 10	
38779—Supplies furnished private car "Temagami," month of January, 1913	23 87	
39005—Supplies furnished private car "Temagami," month of February, 1913	26 10	
39787—Supplies furnished private car "Sir James," month of February, 1913	2 45	
		$85 16

PHILIP SHINESHAFT, ENGLEHART, ONT.

42846—Bread supplied auxiliary car, month of August, 1913, and October, 1913	$4 20	
		$4 20

J. H. STILL MANUFACTURING CO., LTD., ST. THOMAS, ONT.

37374—Handles (axe, adze and sledge)	$49 74	
37924— "	46 94	
38860— "	19 84	
40151—Flag staffs and handles	39 65	
39064—Handles	54 86	
41061— "	34 87	
40508—Tool handles	77 03	
41082—Flag staffs	3 00	
41527—Handles	19 76	
41955— "	56 21	
41908— "	28 33	
43487— "	39 24	
42802—Flag staffs	1 75	
43532—Handles	16 78	
		$488 00

SLAYMAKER LOCK MFG. CORPORATION, LANCASTER, PENN.

39435—Switch locks and keys	$72 00	
42476— "	33 00	
43569—Switch keys	1 12	
		$106 12

G. G. SMITH, EARLTON, ONT.

38946—Damage to pipes in transit, claim No. 6147	$2 70	
		$2 70

SOUTHERN CLASSIFICATION COMMISSION, ATLANTA, GA.

38899—Proportion of expenses, foreign classification, Jan., 1913	$0 54	
41028—Three copies each sup. 7 to 10, incl., No. 39	0 90	
		$1 44

A. W. Skinner, Englehart, Ont.

41889—Settlement of claim No. 6774	$2 64	
		$2 64

Samson Cordage Works, Boston, Mass.

38178—Signal cord	$18 04	
		$18 04

S. Joseph & Grand Island Railroad, St. Joseph, Mo.

40822—Car service balance, April, 1913	$2 25	
		$2 25

T. W. Squire, Toronto, Ont.

38725—Supplies furnished private car "Sir James," Commission's trip of inspection, December, 1912	$24 10	
38727—Supplies furnished private car "Sir James," Hon. James Duff's trip, June, 1912, and Sir James P. Whitney's trip to New York, November 5th, 1912	34 52	
38064—Supplies furnished private cars, Commission's trip of inspection, October, 1912	83	
40503—Supplies furnished private cars, Commission's trip of inspection, March, 1913	21 22	
40446—Supplies furnished private car "Sir James," Commission's trip of inspection, May, 1913	26 26	
41714—Supplies furnished private car "Sir James," Commission's trip of inspection, June, 1913	23 12	
43093—Supplies furnished private car "Sir James," Commission's trip of inspection, July and August, 1913	66 89	
42690—Supplies furnished private car "Sir James," trip of Hon. W. H. Hearst to Sault Ste. Marie, September, 1913	42 35	
42706—Supplies furnished private car "Sir James," trip of Hon. W. H. Hearst to Winnipeg, August 23, 1913	119 15	
		$358 44

Swift Canadian Co., West Toronto, Ont.

38998—Refund of charges collected on prepaid shipment, claim No. 6689	$1 55	
		$1 55

Wm. Scully, Montreal, Que.

37650—Caps	$118 55	
40385—Conductors' buttons	27 78	
39738—Caps	57 00	
43095— "	5 50	
43565— "	122 35	
43194— "	23 60	
		$354 78

San Antonio & Arkansas Pass Railway, San Antonio, Texas.

37288—Car service balance, November, 1912	$2 10	
39235— " " December, 1912	2 45	
38496—Car repairs, bill No. 27426	2 10	
38656—Car service balance, January, 1913	45	
40904—Car repairs, bill No. 28427	55	
		$7 65

L. Smith, Heaslip, Ont.

37938—Ties	$35 85	
		$35 85

STEVENSON BOILER & ENGINE WORKS, PETROLEA, ONT.

38182—Fire extinguishers	$192 00	
38422—"Fairbank" fire extinguishers	72 00	
40153— " "	288 00	
40999— " "	300 00	
		$852 00

L. SILVER, ENGLEHART, ONT.

37658—Wood	$6 75	
40155— "	22 50	
39948— "	22 50	
43198— "	18 00	
		$69 75

SCYTHES & CO., LTD., TORONTO, ONT.

37378—No. 6, 54", duck	$71 31	
37926— " "	71 31	
39537— " "	74 09	
39062— " "	74 09	
42321— " "	71 32	
42461—Colored waste	53 18	
42474— "	53 08	
		$468 38

SANDY VALLEY & ELKHORN RAILWAY CO., BALTIMORE, MD.

43034—Car service balance, July, 1913	$9 45	
		$9 45

SHEET METAL PRODUCTS CO., LTD., TORONTO, ONT.

37793—Iron, charcoal tin	$58 91	
38595—Roofing caps and pipes	22 70	
37376—Apollo iron	42 48	
37930—Pipes, elbows, machine oilers, sheet iron, etc.	142 16	
39287—Stove pipe	68 22	
38862—Tinware, Canada plate	90 95	
40149—Fire pails, etc.	34 08	
39060—Tinware, etc.	118 06	
40537—Tinware	38 69	
40626—Oil cans, Canada plate	25 50	
41525—Hardware	27 64	
41196—Pipe, delivery cans	10 44	
41869—Delivery can	3 23	
41957—Water coolers, oil cans, tinware	18 68	
42309—Oil cans, galvanized iron	25 78	
43493—Oil cans	7 28	
42804—Pipe	30 72	
		$765 52

W. SCULLAND, PORCUPINE, ONT.

40665—Meals supplied men, April, 1913, on washout	$18 50	
41356—Rig supplied *re* fire Englehart, alleged injury—C. M. Stokes	1 00	
		$19 50

JAS. SINTON, ENGINEERING DEPT., NORTH BAY, ONT.

37747—Expenses, October and November, 1912	$38 95	
36882—Travelling expenses, December, 1912	10 00	
38965—Expenses, January, 1913	9 90	
39844— " February, 1913	10 95	
40825— " May, 1913	19 05	
42363— " June and July, 1913	25 90	
42302— " August, 1913	19 05	
43611— " September, 1913	13 25	
		$147 05

H. Sale, North Bay, Ont.

40059—Travelling expenses, March and April, 1913	$8 15	
		$8 15

St. Lawrence & Adirondack Railway, New York, N.Y.

39396—Ticket balance, March, 1913	$5 65	
		$5 65

Agent, South Porcupine Station, Ont.

37812—Outstanding account, shipment thrown out, claim No. 6040	$2 32	
38770—Outstanding shortage, one case shirts, claim No. 6318	1 24	
39212—Outstanding account, demurrage uncollected, claim No. 6671	27 00	
37545—Outstanding account, shortage scales, claim No. 5877	1 24	
37637— " " demurrrage uncollected, claim No. 6081	8 00	
37639— " " shipment refused, claim No. 4973	1 20	
37873— " " double billing, claim No. 6080	2 12	
41672— " " shipment broken and refused, claim No. 6928	2 26	
42748—Outstanding account, overcharge in weight, settler's effects, claim No. 6445	36 24	
		$81 62

St. Louis South Western Railway Co., St. Louis, Mo.

40966—Car repairs, July to September, 1912	$0 92	
		$0 92

Standard Publishing Co., Kingston, Ont.

40688—Advertisement, Cobalt station grounds	$21 25	
		$21 25

"Spectator" Printing Co., Ltd., Hamilton, Ont.

40690—Advertisement, Cobalt station grounds	$25 00	
		$25 00

Thomas Sword, Heaslip, Ont.

40100—Ties	$41 79	
		$41 79

Sparks Bros., Elk Lake, Ont.

40325—Stage fare, February, 1913 (surveyors)	$9 50	
40408—Team hire, April 4th–April 18th, 1913	58 00	
		$67 50

L. A. Ship, Earlton, Ont.

40020—Ties	$29 95	
41293—Ties	9 98	
		$39 93

A. Swindley, Earlton, Ont.

38163—Ties	$8 16	
		8 16

G. Simpson, Lineman, Englehart, Ont.

37851—Travelling expenses, November, 1912	$7 25	
36880— " " December, 1912	4 20	
38963— " " January, 1913	4 80	
40037— " " February, 1913	5 65	

G. Simpson, Lineman.—*Continued.*

40039—	"	"	March, 1913	5 50	
41101—	"	"	April and May, 1913	10 75	
41328—	"	"	June, 1913	12 70	
42038—	"	"	July, 1913	18 05	
42300—	"	"	August, 1913	8 95	
43120—	"	"	September, 1913	9 45	
					$87 30

B. F. Smith, Electrician, North Bay, Ont.

38231—	Travelling expenses, November, 1912			$12 90	
36884—	"	"	December, 1912	9 20	
39019—	"	"	January, 1913	7 25	
38010—	"	"	February, 1913	11 10	
40061—	"	"	March, 1913	8 70	
39842—	"	"	April, 1913	7 20	
41103—	"	"	May, 1913	12 20	
41723—	"	"	June, 1913	7 50	
42399—	"	"	July, 1913	10 10	
42807—	"	"	August, 1913	11 05	
43118—	"	"	September, 1913	6 70	
					$103 90

Robt. Swan, Constable, North Bay, Ont.

38041—	Travelling expenses, month of November, 1912			$44 85	
36776—	"	"	December, 1912	36 00	
38837—	"	"	January, 1913	26 00	
38008—	"	"	February, 1913	24 45	
40041—	"	"	March, 1913	24 00	
39160—	"	"	April, 1913	9 00	
40693—	Flashlight furnished by Burrowes & Parmelee, April 11th, 1913			1 00	
40823—	Travelling expenses, month of May, 1913			31 00	
41727—	"	"	June, 1913	23 50	
42401—	"	"	July, 1913	39 00	
42715—	"	"	August, 1913	19 90	
43607—	"	"	September, 1913	25 50	
43590—	"	"	October, 1913	26 10	
					$330 30

Jas. Simpson ("The Industrial Banner"), Toronto.

37695—	Advertisement, Christmas number, *The Industrial Banner*	$24 00
		$24 00

Shepard & Morse Lumber Co., Ottawa, Ont.

37537—	Overcharge in weight on horses, claim No. 5623	$19 16
36820—	Overcharge weight, car horses, claim No. 5583	5 08
39613—	Loss one barrel molasses, account damage, claim No. 6332	10 75
		$34 99

A. Segouin, Nushka, Ont.

39589—	Ties	$453 69
39589—	Ties	271 38
40469—	Switch sets	100 79
40098—	Ties	241 14
40100*a*—	Switch sets	167 98
41293—	Ties	64 38
41511—	Ties	124 65
		$1,424 01

F. W. Sharvell, Traffic Accountant's Dept., North Bay, Ont.

37743—Travelling expenses, October and November, 1912	$5 50	
		$5 50

Jos. Simms, Cobalt, Ont.

37805—Cartage at Cobalt, month of November, 1912	$147 80	
37380—Cartage at Cobalt, month of December, 1912	123 68	
39007—Cartage at Cobalt, month of January, 1913	98 41	
		$369 89

Samuel Stayman, Nushka, Ont.

39463—Ties	$170 64	
		$170 64

J. H. Shibley, Haileybury, Ont.

37660—Wood	$2 25	
		$2 25

Standard Fuel Co., of Toronto, Ltd., Toronto, Ont.

38431—Coal, October and November, 1912	$1,193 80	
39531—Soft Coal	585 09	
38310— "	156 22	
40393— "	445 77	
39896— "	95 52	
		$2,476 40

Swedish Steel and Importing Co., Ltd., Montreal, Que.

39431—Steel	$50 46	
41207—Steel	31 08	
43172—Steel	21 10	
		$102 64

Jas. Sowards Coal Company, Kingston, Ont.

38225—Stove coal	$972 62	
36844— "	332 06	
38897— "	436 71	
39533— "	1,256 38	
40381— "	807 01	
39898— "	179 11	
41003— "	215 05	
		$4,198 94

Steel Company of Canada, Limited, Toronto, Ont.

37795—Iron and steel, tie plates, bolts and washers, coach screws and rivets, etc.	$3,568 62
38157—Iron	26 88
38551—Freight charges deducted in error	43 90
38597—Bolts, screws, tacks, etc.	174 73
38599—Washers	34 32
37646—Soft steel, bolts and screws, rivets, etc.	533 40
37932—Machine bolts, nuts, steel and spikes	505 44
39439—Bolts and washers	52 14
39535—Machine bolts	18 33
38188—Track spikes, iron rivets	970 76
39969—Sleeves, copper wire	2,847 23
39971—Spikes, bolts, etc.	1,818 61
38810—Hex nuts, iron, nuts	150 58
40071—Track spikes	1,562 33
39068—Copper nails	11 22

STEEL COMPANY OF CANADA.—*Continued.*

39432—Machine bolts	43 10	
39736—Bolts and screws, spikes	947 30	
40553—Bolts and nuts	164 92	
40555—Machine bolts	26 64	
40803—Spikes	831 60	
40805—Bolts, steel, nuts	831 09	
40807—Tie plates	10,322 42	
41005—Bolts, screws, ship spikes, etc.	1,410 90	
41065—Over allowance for freight on invoices for tie plates	165 40	
40290—Bolts and screws	258 57	
40504—Iron and machine bolts	146 57	
40506—Steel	208 40	
41086—Machine bolts	32 70	
41521—Washers	20 52	
41523—Machine bolts	221 39	
41200—Washers	24 78	
41202—Machine bolts, rivets and screws	186 81	
41204—Steel, track bolts	234 55	
41871—Galvanized iron, wire, nuts	317 26	
41959—Nuts, tacks	44 74	
42223—Steel bars and bolts	284 30	
42271—Iron	32 71	
42313—Washers	36 86	
42315—Square topped nuts	18 78	
42317—Steel bars, rivets	102 94	
42319—Ship spikes	25 09	
42465—Track bolts and nuts, bars and rivets	409 50	
41910—Machine bolts	30 75	
41982—Iron, steel	58 68	
42174—Iron bars	161 21	
42220—Coach screws	86 35	
43397—Guy wire, guy clamps and bolts, washers	139 64	
43399—Steel, iron and steel	178 88	
43495—Bolts and screws	69 34	
43561—Iron bars	13 50	
42798—Nuts	21 44	
42800—Bolts	81 85	
43174—Steel and iron	107 36	
43196—Wire	275 03	
43200—Freight charges deducted in error	34 14	
43342—Handles	114 81	
43344—Bolts	16 73	
43534—Steel bars	46 75	
43630—Washers	85 24	
43744—Steel	22 14	
		$31,212 17

ARTHUR SMITH, IROQUOIS FALLS, ONT.

36650—Ties	$62 58	
37126— "	13 68	
37126— "	55 77	
39461— "	91 47	
40465— "	119 31	
42000— "	125 34	
43240*a*— "	19 80	
43240*a*— "	29 10	
		$517 05

T. STRAIN, SOUTH PORCUPINE, ONT.

37118—Building of three chimneys at Schumacher and South Porcupine	$22 00	
		$22 00

W. L. Spencer, Earlton, Ont.

38172—Supplies for commissary	$16 12	$16 12

Schofield, Holden Machine Co., Ltd., Toronto, Ont.

39967—Flue rollers	$80 60	$80 60

Julian Sale Leather Goods Co., Ltd., Toronto, Ont.

38721—Bag	$10 00	$10 00

L. Soper, Englehart, Ont.

37724—Damage to furniture	$1 30	
39919—Damage to Oak feeder, claim No. 6189	0 80	
39921—Damage to wardrobe, claim No. 6188	3 00	
40609—Loss, one set table legs, claim No. 6553	1 99	
		7 09

Stratford Herald Printing Co., Ltd., Stratford, Ont.

38368—Advertising, machinists wanted	$1 00	$1 00

Patrick Sampson, Iroquois Falls, Ont.

40018—Ties	$149 58	$149 58

St. Paul & Kansas City Short Line R. R., Chicago, Ill.

38411—Ticket balance, October, 1912	$4 50	$4 50

G. H. Sergeff, Heaslip, Ont.

40098—Ties	$28 35	$28 35

Agent at Schumacher Station, Ont.

39627—Outstanding account shortage, case dry goods, claim No. 5864	$1 78	
40152—Outstanding account shortage, claim No. 6473	$1 93	
		$3 71

Spokane, Portland & Seattle Railway, Portland, Ore.

40459—Car repairs, October, 1912, bill No. 29917	$8 80	$8 80

San Antonio, Uvalde & Gulf R.R., St. Louis, Mo.

41661—Car repairs, Reg. No. 710	$1 09	$1 09

W. J. Speller, Homer Siding, Ont.

40100*a*—Ties	$103 83	$103 83

Standard Color Test, Philadelphia, Pa.

40997—Testing material	$31 00	$31 00

MRS. JANE SEAGER, TORONTO, ONT.

40192—For part south half lot 1, con. 1, Calvert, 1.9 acres	$47 50	$47 50

G. G. SCACE, MONTEITH P.O.

41293—Ties	$67 10	
40418— "	22 36	
		$89 46

"THE SUN," ORANGEVILLE, ONT.

40905—Advertisement, Cobalt station grounds	$10 60	$10 60

SANITARIS, LIMITED, ARNPRIOR, ONT.

40184—Loss, five cases bottles, account shortage, claim No. 6795 ..	$6 25	$6 25

SAN PEDRO, LOS ANGELES & SALT LAKE R.R., LOS ANGELES, CAL.

41307—Car repairs, Nov., 1912, to Jan., 1913	$4 98	
40968—Car repairs, Dec., 1912, Bill No. 43-20-121	3 22	
		$8 20

A. G. SPRENGER, NEW YORK, N.Y.

40410—Room and board, King George Hotel, Cochrane, account snow blockade	$2 45	$2 45

A. SKJANSBYE, SESEKINIKA, ONT.

40418—Ties	$63 07	
41971— "	21 02	
		$84 09

STREETS' WESTERN STABLE CAR LINE, CHICAGO, ILL.

41507—Car service, balance, May, 1913	$1 66	$1 66

G. S. SOUTER & CO., NORTH BAY, ONT.

41194—Brick	$115 00	$115 00

STEEL EQUIPMENT CO., LTD., OTTAWA, ONT.

41308—Binding cases	$12 00	
42273—Ottawa files	9 00	
43359—Transfer cases	12 00	
		$33 00

THOMAS STEWART, CLEAR LAKE, ONT., VIA COBALT, ONT.

41447—Damage to furniture, claim No. 6759	$5 00	$5 00

ST. LOUIS, BROWNSVILLE & MEXICO RY., KINGSVILLE, TEXAS.

41154—Car repairs	$0 52	
42081—Car service, balance, May, 1913	2 70	
		$3 22

MRS. C. S. STILES, TORONTO, ONT.

41761—Settlement of claim No. 6194	$5 00	$5 00

JAS. SALE, FERONIA, ONT.

41763—Loss, account damages to mirror, claim No. 6797 ..... $3 00 — $3 00

T. G. SHARP, HAILEYBURY, ONT.

40630—Plumbing performed at Haileybury station ..... $8 10 — $8 10

M. SAMMON, NEW LISKEARD, ONT.

41514—Release and discharge for all claims, alleged injuries .... $77 76 — $77 76

GEO. STEELE, TROUT MILLS, ONT.

41518—Donation, heifer, alleged killed, May 31st, 1913 ..... $20 00 — $20 00

MRS. E. H. SUTTON, NEW LISKEARD, ONT.

41793—Loss and damage to furniture, claim No. 6084 ..... $15 00 — $15 00

FLORENCE SILVER, HAILEYBURY, ONT.

42753—Loss baggage, check No. 399063, Earlton fire claim No. 7189 ..... $75 00 — $75 00

SULLIVAN AND SHILLINGTON, COBALT, ONT.

42535—Damage to potatoes in transit, claim No. 6569..... $12 00 — $12 00

G. SWINDELHURST, HANBURY P.O., ONT.

43103—Fence posts ..... $36 84 — $36 84

SPECIAL COMMITTEE ON RELATIONS OF RAILWAY OPERATION TO LEGISLATION, CHICAGO, ILL.

42583—For six copies of pocket edition of Rules and Instructions for the inspection and testing of locomotive boilers and their appurtenances, with interpretations and rulings . . . . $0 60 — $0 60

SHEDDEN FORWARDING CO., TORONTO, ONT.

42590—Freight charges on six boxes books from North Bay .... $2 02 — $2 02

J. H. SHILLINGTON, THORNLOE, ONT.

42732—Settlement of claim No. 7051..... $10 00 — $10 00

C. SOMERVILLE, IROQUOIS FALLS, ONT.

43094—Bread . . . . $3 64 — $3 64

ALLAN SMITH, CHARLTON, ONT.

43240a—Ties $117 75
43240a—Piles 376 50
$494 25

TEMISKAMING TELEPHONE COMPANY, NEW LISKEARD, ONT.

37539—Thirteen pieces clay conduit broken, claim No. 5700.....	$19 76	
37000—Telephone service in freight and ticket office, January 1st to July 1st, 1913	27 50	
37412—Rent of telephone, A. A. Cole's office, Cobalt, from January 1st to July 1st, 1913	26 00	
37748—Loss, account damage to clay conduit, claim No. 5733....	4 35	
39518—Rental of telephone, telegraph office, Haileybury, to September 20th, 1913	17 50	
39520—Rental of telephone, telegraph office, Cobalt, to October 1st, 1913	22 50	
39522—Rental of telephone, freight office, Cobalt, Oct. 1st, 1913..	28 50	
40695—Rental of telephone, Haileybury freight shed, to September, 1913	15 00	
40889—Rental of telephone, Kerr Lake siding, to October 31st, 1913	25 00	
41561—Rental of telephone, Mining Engineer's office, to January 14th, 1913	26 00	
41360—Rental of telephone, Haileybury station, to December 31st, 1913	15 00	
41362—Rental of telephone, 16a and 16b, New Liskeard station, to December, 1913	30 00	
42809—Rental of telephone, telegraph office, Haileybury, to March 1st, 1914	15 62	
43009—Work performed half-mile south of Earlton, June 13, 1913	36 55	
42508—Rental of telephone in commercial telegraph office, to April 1st, 1914	22 50	
43098—Rental of telephone, Haileybury freight shed, October, 1st, 1913, to April 1st, 1914	15 00	
43100—Rental of telephone, freight office, Haileybury, April 1st, 1913, to October 1st, 1913	15 00	
		$361 78

THISTLE RUBBER TYPE FOUNDRY COMPANY, SOMBRA, ONT.

37662—Rubber stamp	$0 15	
38312—Dates and stamps	3 70	
40403—Line stamps	1 75	
39608—Rubber stamps	1 50	
39740—Stamps	3 15	
39796—Stamps	0 45	
39950—Line stamps	0 45	
41088—Rubber stamps	2 15	
42275—Rubber stamps	1 00	
41970—Rubber stamps	3 60	
42132—Rubber stamps	2 35	
43361—Rubber stamps	3 30	
42896—Rubber stamps	2 05	
43686—Rubber stamps	3 60	
		$29 20

GERALD C. THOMPSON ESTATE, NORTH BAY, ONT.

37971—Inspection trips and travelling expenses, January 31st, 1912, to April 30th, 1912	$104 00	
		$104 00

THE TORONTO WORLD, TORONTO, ONT.

39101—Subscription, December, 1912, to December, 1913	$3 00	
		$3 00

TALLMAN BRASS AND METAL CO., HAMILTON, ONT.

40397—Metals, brass, etc.	$86 22	
42323—Copper tube	14 21	
41988—Brass rods	61 76	
43540—Sheet brass	20 57	
		$182 76

TIME TABLE DISTRIBUTING COMPANY OF CANADA, LTD., ST. JOHN, N.B.

36942—Distributing time tables for month of December, 1912....	$15 00	
38903—Distributing time tables for month of January, 1913.....	15 00	
38372—Distributing time tables for month of February, 1913.....	15 00	
40261—Distributing time tables for month of March, 1913.....	15 00	
39678—Distributing time tables for month of April, 1913.....	15 00	
40669—Distributing time tables for month of May, 1913.....	15 00	
40692—Distributing time tables for month of June, 1913.....	15 00	
41897—Distributing time tables for month of July, 1913.....	30 00	
42557—Distributing time tables for month of August, 1913.....	15 00	
43139—Distributing time tables for month of September, 1913....	15 00	
43236—Distributing time tables for month of October, 1913.....	15 00	
		$180 00

TEMAGAMI HOTEL AND STEAMBOAT CO., TEMAGAMI, ONT.

39441—Dynamite	$10 00	
41180—Suplies, hay, etc.	83 60	
		$93 60

D. R. THOMAS, DEPT. G. F. AND P. A., NORTH BAY, ONT.

37749—Travelling expenses, month of November, 1912.....	$13 35	
36778—Travelling expenses, month of December, 1912.....	28 00	
39099—Travelling expenses, month of January, 1913.....	25 80	
39981—Travelling expenses, month of February, 1913.....	27 00	
40063—Travelling expenses, month of March, 1913.....	53 75	
39848—Travelling expenses, month of April, 1913	34 50	
40827—Travelling expenses, month of May, 1913	44 50	
41729—Travelling expenses, month of June, 1913	52 00	
42365—Travelling expenses, month of August, 1913	54 85	
42306—Travelling expenses, month of August, 1913	36 60	
43513—Travelling expenses, month of September, 1913	41 15	
43380—Travelling expenses, month of October, 1913	36 85	
		$448 35

TAYLOR & ARNOLD, LTD., MONTREAL, QUE.

38201—Washburn knuckles	$18 00	
38192—Sharon knuckles	19 50	
38426—Knuckles	6 50	
40401—Knuckles	39 00	
39902—Janney locks	12 60	
39982—Janney knuckles	35 75	
41221—Simplex locks	10 20	
41214—Simplex locks, knuckles	26 20	
42279—Monarch and Janney knuckles	32 50	
42325—Knuckles and knuckle parts	61 85	
41986—Knuckles	15 00	
43176—Knuckles	32 25	
		$309 35

TEMPLETON, KINLY & CO., LTD., TORONTO, ONT.

39447—Jack parts	$17 19	
38194—Car jacks	73 06	
41219—Track jacks	231 15	
41210—Car jacks	121 50	
43499—Track jacks	43 20	
		$486 10

TORONTO WEEKLY RAILWAY AND STEAMBOAT GUIDE, LTD., TORONTO, ONT.

37917—Subscription to Toronto Weekly Railway and Steamboat Guide, October 5th, 1912 to April 5th, 1913	$2 60	
39676—Subscription to Toronto Weekly Railway and Steamboat Guide, April 5th, 1913, to October 5th, 1913	2 60	
43232—Subscription to Toronto Weekly Railway and Steamboat Guide, April 5th, 1914	2 60	
		$7 80

TRAVELLERS' INSURANCE CO., HARTFORD, CONN.

38415—Ticket balance,	October, 1912	$2 20	
37340— "	November, 1912	2 75	
39277— "	December, 1912	1 40	
38712— "	January, 1913	1 24	
39400— "	March, 1913	7 70	
40850— "	April, 1913	2 61	
42107— "	May, 1913	96	
41868— "	June, 1913	3 02	
42955— "	July, 1913	69	
43056— "	August, 1913	4 27	
			$26 84

THOMSON, TILLEY & JOHNSTON, TORONTO, ONT.

—Fee as counsel, November, 1912	$400 00	
37483—Fee as counsel, December, 1912	$400 00	
36542—For services rendered and disbursements in *re* Russ and T. & N. O. Railway	120 00	
36554—Fee as counsel, January, 1913	400 00	
38631—Expenses covering disbursements and fees, *re* sundry accounts	7 36	
38649—Fee as counsel, February, 1913	400 00	
37872—Fee as counsel, March, 1913	400 00	
39637—Charges *re* Cobalt Lake Mining Co., and Cobalt station extension	705 37	
39639—Balance of account, *re* A. R. MacDonnell, Dec. 10th, 1912	1,500 00	
39831—Fee as counsel for April, 1913	400 00	
39094—Fee as counsel, May, 1913	400 00	
40112—Fee as counsel, June, 1913	400 00	
41403—Fee as counsel, July, 1913	400 00	
41382—Charges, *re* Lot 427, Dr. E. F. Armstrong	10 00	
41438—Fee as counsel, month of August, 1913	400 00	
42589—Fee as counsel, month of September, 1913	400 00	
42604—Fee as counsel, month of October, 1913	400 00	
		$7,142 73

TRADES AND LABOR CONGRESS OF CANADA, TORONTO, ONT.

37858—One quarter page advertisement in convention souvenir	$25 00	
		$25 00

TRANS-CONTINENTAL FREIGHT BUREAU, CHICAGO, ILL.

37120—Cost of freight tariffs, November and December, 1912	$1 71	
39541—Cost of freight tariffs, March, 1913	1 11	
38370—Tariffs supplied, December, 1912, and January, 1913	1 62	
39973—Tariffs supplied, September, October and November, 1912	4 35	
40671—Tariffs supplied, March, 1913	2 31	
40570—Cost of tariffs supplied, March and April, 1913	3 63	
42066—Cost of tariffs supplied, April 30th, to July 18th, 1913	3 94	
42506—Cost of tariffs supplied, September 16th, 1913	1 40	
43234—Cost of tariffs supplied, October, 1913	1 88	
		$21 95

TELFER BROS., COLLINGWOOD, ONT.

39717—Overcharge in rate, onions, claim No. 6313	$6 30	
40399—Amount of freight deducted in error from invoice, January 5th, 1911	4 42	
42736—Settlement of claim No. 6358	44 10	
		$54 82

T. & N. O. RAILWAY TELEGRAPH, NORTH BAY, ONT.

42848—Telegraph message, September 27th, 1913, A. J. Parr	$0 42	
		$0 42

TORONTO SANITARY TOWEL SUPPLY CO., TORONTO, ONT.

37653—Towel supply,	November, 1912	$1 00	
36724— "	December, 1912	1 00	
38689— "	January, 1913	1 00	
37862— "	February, 1913	1 00	
39979— "	March, 1913	1 00	
39070— "	April, 1913	1 00	
40787— "	May, 1913	1 00	
41030— "	June, 1913	1 00	
41460— "	July 1913	1 00	
42012— "	August, 1913	1 00	
43099— "	September, 1913	1 00	
43382— "	October, 1913	1 00	
			$12 00

TORONTO, HAMILTON AND BUFFALO RAILWAY CO., HAMILTON, ONT.

38413—Ticket balance, October, 1913	$3 48	
38527—Car repairs, bills Nos. 13918, 2587, 2767, 303	5 49	
37060—Car repairs, September, 1912, audit No. 2969	2 79	
37338—Ticket balance, November, 1912	4 40	
39083—Car repairs, October and July, 1912	9 39	
39275—Ticket balance, December, 1912	7 87	
39398—Ticket balance, March, 1913	4 48	
41315—Car repairs, December, 1912, bill No. 3645	2 75	
42953—Ticket balance, July, 1913	2 26	
43054—Ticket balance, August, 1913	2 37	
43568—Car repairs, bill No. 4796	32 78	
		$78 06

TRAFFIC SERVICE BUREAU, CHICAGO, ILL.

42277—Subscription to The Traffic World, ending 7-12-14	$10 00	
		$10 00

GEO. TAYLOR HARDWARE CO., COBALT, ONT.

37573—Damage to ranges, claim No. 5154	$25 00	
37969—One axe	85	
36676—Refund of charges paid twice, claim No. 5345	42 53	
37002—Furnace pipes and valve for station, New Liskeard	10 90	
37750—Damage to steel clad baths, claim No. 5839	16 80	
38901—Bolts and pipe	2 20	
39681—Loss, one carboy and contents, claim No. 6187	4 54	
38778—One shaft hanger broken in transit, claim No. 6315	2 00	
38948—Loss, 3 tea kettles, missing from case, claim No. 6210	3 42	
40327—Lock for cash drawer, New Liskeard station	75	
40611—Loss, two single trees and one double tree	2 75	
41385—Damage to cook stove in transit, claim No. 6460	3 00	
41387—Loss, one bar square tool steel, claim No. 6765	4 23	
41469—Damage to hose in transit, claim No. 6757	3 75	
41775—Overcharge in weight, glass, claim No. 6979	4 81	
41576—Loss and freight charges, damage, claim No. 6890	39 38	
42685—Overcharge on sewer pipe, claim No. 5918	3 00	
42687—Charges, over-assessed by agent in error	7 00	
42556—Loss, test lead and litharge, claim No. 6491	5 97	
		$182 88

TOLEDO AND OHIO CENTRAL RAILWAY CO., TOLEDO, OHIO.

41313—Car repairs, February, 1913, bill No. 3295	$0 58	
41669—Car repairs, audit No. 22982	1 28	
		$1 86

TRUNK LINE ASSOCIATION, NEW YORK, N.Y.

39293—Copies supplement No. 10 to official classification Nos. 38 and 39	$0 35	
39975—Copies supplement No. 9 to official class Nos. 38 and 39..	11 80	
40568—Thirty five copies official classification, No. 40	11 55	
42064—Thirty five copies supplement, No. 2 to official classification, No. 40	35	
		$24 05

TORONTO ELECTRIC LIGHT CO., LTD., TORONTO, ONT.

37599—Electric light service, October 19th to November, 19th, 1912	$6 26	
36636—Electric light service, November 19th, to December 19th, 1912, and 1 doz. lamps	8 73	
37122—Electric light service, December 19th, to January 20th, 1913	5 51	
37860— " " January 20th, to February 18th, 1913	8 07	
39815— " " February 18th, to March 20th, 1913	5 01	
39072— " " March 20th, to April 22nd, 1913	4 35	
40557— " " April 22nd, to May 20th, 1913	2 66	
40450—Electric light service, from May 20th to June 19th,	3 67	
41875—Electric light service, from June 19th to July 21st, 1913...	4 70	
41720—Electric light service, from July 21st, to August 21st, 1913	4 35	
43097—Electric light service, from August, 21, to Sept. 22, 1913	3 82	
43102—Electric light service, from Sept. 22nd to Oct. 22nd, 1913.	4 48	
		$61 61

TEXAS AND PACIFIC RAILWAY, DALLAS, TEXAS.

38373—Car service balance, October, 1912	$17 85	
37294—Car service balance, November, 1912	5 25	
39245—Car service balance, December, 1912	7 35	
39349—Car repairs, October, 1912, bill No. B11610	40	
38664—Car service balance, January, 1913	4 05	
39843—Car repairs, December, 1912, bill No. 12575	44	
39362—Car service balance, March, 1913	14 85	
41309—Car repairs, February, 1913, bill No. C3713	3 87	
40828—Car service balance, April, 1913	14 85	
42153—Car repairs, bill No. C5742, April, 1913	1 81	
		$70 72

TEMISKAMING & NORTHERN ONTARIO RAILWAY, OPERATION ACCOUNT.

36800—Undercharge in weight on horses, claim No. 5647	$0 56
36814—Refund of stop-off charge paid connections, lumber, Callander to Porcupine, claim No. 5758	4 80
36816—Charges one way, Charlton to Englehart, car groceries billed Charlton, should have been Cochrane, claim No. 5833	8 89
36818—Undercharge in rate, car horses, claim No. 5583	7 40
37414—Firewood purchased by A. B. Pratt from Operating Department for Camp No. 7, Residency No. 4	75 75
37782—Undercharge in rate, lumber, claim No. 5084	22
37792—Shortage, one Trojan steel knuckle with connections, claim No. 5872	2 33
37794—Shortage, coal and freight charges, claim No. 5837	57 27
37796—Overcharge in weight, scrap iron, claim No. 5883	3 74
39443—Vegetables for Commissary, October-November, 1912	28 90
39927—Overcharge in rate fruit, claim No. 4848	6 00
38970—Overcharge in rate cement, claim No. 5891	98 07
39002—Undercharge in rate, horses, claim No. 6422	2 13
40583—Refund of stop-off charge account, claim No. 6495	44
40172—Undercharge in rate silver ore	1 92
41475—Loss account, shortage one armature, claim No. 5954	75 00
41477—Loss, machine bolts shortage with connections, claim No. 6796	3 51
41479—Undercharge in rate, silver ore, claim No. 6854	11 00
41481—Undercharge in rate, lumber, claim No. 6655	2 20
41668—Overcharge in rate, steam shovel, claim No. 6609	88

T. & N. O. Operation Account.—Continued.

42515—Outstanding account, misrouting of shipment, claim No. 6897	4 08	
42681—Undercharge in weight, silver ore, claim No. 6934	2 88	
42683—Undercharge account, error in rate on lumber, claim No. 5560	3 47	
43011—Telegraph messages	1 67	
42632—Undercharge in rate, mining machinery, claim No. 6715	2 03	
43497—B/C 18468	4 21	
42808—Potatoes supplied from Englehart Green House	8 00	
		$417 35

Toledo, St. Louis & Western Railway, Toledo, Ohio

38371—Car service balance, October, 1912	$8 40	
37292— " " November, 1912	1 40	
39243— " " December, 1912	2 10	
38662— " " January, 1913	4 50	
39436—Car repairs, February, 1913	1 80	
41667—Car repairs, audit No. 79968	3 34	
42083—Car service balance, May, 1913	1 80	
		$23 34

Taylor & Pringle Co., Owen Sound, Ont.

39719—Loss, 10½ barrels beer, frozen in transit, claim No. 5171	$60 00	
		$60 00

Treasurer of Ontario, Toronto, Ont.

36582—Lot 10, Con. 6, German, 16.5 acres, ballast pit	$16 50	
36612—Right-of-way *re* Widdifield diversion through townships Blyth, Merrick, Notman, Stewart, Osborne, 190.06 acres.	190 06	
36762—Amount due the Government on the W. ½ of Lot 21, Con. 3, Widdifield, purchased from John E. Hughes	53 75	
40301—Furnishing blue prints seven townships	4 00	
40254—For Lot 10, Con. 6, German, Barber's Bay, ballast pit	155 33	
41490—Dues on wood cut on Lot 10, Con. 4, Maisonville, season 1912-13	100 00	
41522—For S. ½ Lot 7, Con. 2, Calvert, 5.4 acres	5 40	
43366—For proceeds from revenues, Temiskaming & Northern Ontario Railway for year ended October 31st, 1913	250,000 00	
		$250,525 04

Toronto Silver Plate Co., Toronto, Ont.

39445—Reflectors	$11 50	
40395—Plating	11 50	
41212—Replating and refinishing reflectors	12 08	
43538—Reflectors	11 50	
		$46 58

Trinity & Brazos Valley Railroad, Houston, Texas.

38375—Car service balance, October, 1912	$1 05	
37296—Car service balance, November, 1912	2 45	
40970—Car repairs, April, 1913	6 08	
42436—Car repairs, bill No. 32112	23 61	
43299—Car repairs, bill No. 23709	1 07	
43496—Car repairs, March and August, 1913	3 64	
		$37 90

AGENT AT THORNLOE STATION, ONT.

36828—Outstanding account, unlocated shortage shipment beans, claim No. 5862	$1 45	
39629—Outstanding account, shortage 5 cases matches, claim No. 6499	1 54	
38772—Outstanding account, shortage two chairs, claim No. 6195	12 00	
42750—Cancellation of demurrage account, error in billing on part of G. T. Ry.	35 00	
		$49 99

JOHN TAYLOR & CO., LTD., TORONTO, ONT.

38199—Soap	$48 60	
38190— "	34 00	
38424— "	27 00	
39742— "	27 00	
40510— "	27 00	
42327— "	61 00	
43403— "	27 00	
		$251 60

TOLEDO, PEORIA & WESTERN RAILROAD, PEORIA, ILL.

38369—Car service balance, October, 1912	$10 65	
39241—Car service balance, December, 1912	4 20	
38660—Car service balance, January, 1913	3 60	
40826—Car service balance, April, 1913	2 70	
		$21 15

J. J. TURNER & SONS, PETERBOROUGH, ONT.

41011—Tents	$33 74	
		$33 74

THE THOMAS CO., WATCH AND CLOCK INSPECTION, NORTH BAY, ONT.

39674—Repairing clock despatcher's office	$3 00	
39846—Expenses, April, 1913	9 00	
40697—Watch inspection, April, 1913	12 00	
40829—Expenses, May, 1913	9 00	
40566—Watch inspection, May, 1913	12 00	
41563—Watch inspection, June, 1913	24 00	
41364—Expenses, June, 1913	17 00	
42403—Expenses, July and August, 1913	23 00	
41722—Watch inspection, July 7th to August 2nd, repairing clock	36 00	
41912—Clock shipped to Elk Lake	16 00	
42040—Expenses, August, 1913	11 00	
42637—Watch inspection, August 18th to 22nd, 1913	15 00	
43444—Expenses, September, 1913	5 50	
43536—Alarm clock inspection, October 22–25, 1913	10 50	
		$203 00

THIEL DETECTIVE SERVICE CO., TORONTO, ONT.

36646—Amount on account of services	$1,000 00	
38679—Amount on account of services	750 00	
39080—Amount on account of services	500 00	
42708—Services and expenses, September 10th to 26th, 1913	146 80	
		$2,396 80

THORPE BROS., NEW LISKEARD, ONT.

38774—Loss, bed spring, claim No. 5926	$3 29	
40263—Two liveries removing L. G. Faught and parents from station to hospital	7 00	
40448—Casket and undertaking, etc.	152 50	
41424—Loss, rocker broken in transit, claim No. 6976	50	
42554—Loss account, one mirror broken, claim 7005	5 58	
		$168 87

TORONTO PRESS CLUB, TORONTO, ONT.

41494—Donation to club	$5 00	
		$5 00

TOLEDO FOUNDRY & MACHINE CO., TOLEDO, OHIO.

42329—Pinions	$70 00	
		$70 00

TOLEDO TERMINAL RAILROAD, DETROIT, MICH.

40092—Car repairs, bill No. 635	$2 33	
		$2 33

TOMSTOWN LUMBER CO., TOMSTOWN, ONT.

37126—Switch sets	$89 59	
38565—Ties	14 72	
39463—Switch sets	179 21	
39589—Ties	191 88	
38898—Loss, chocolates and mints pilfered in transit	1 71	
40018—Ties	191 16	
40020—Switch sets	134 38	
41293—Ties	44 80	
41971—Ties	44 80	
41971—Ties	1 90	
		$894 15

TAMPA NORTHERN RAILROAD, TAMPA, FLA.

42085—Car service balance, May, 1913	$3 15	
		$3 15

TENNESSEE CENTRAL RAILROAD, NASHVILLE, TENN.

40908—Car repairs, February 15th and February 26th, 1913	$2 33	
41663—Car repairs, audit No. 1437	2 68	
43243—Car repairs, bill No. 1991	5 37	
42440—Car repairs, bill No. 1462	23 11	
		$33 49

H. C. TUGWELL & CO., LTD., TORONTO, ONT.

36938—Photo printing	$2 88	
		$2 88

TRETHEWEY SILVER COBALT MINE. LTD., COBALT, ONT.

39615—Pulley broken in transit, claim No. 5895	$9 00	
38950—Shortage pipe, claim No. 6301	6 46	
39000—Overcharge in weight silver ore, claim No. 6379	6 88	
40186—Overcharge in weight silver ore, claim No. 6523	8 21	
41383—Overcharge in weight silver ore, claim No. 6626	10 66	
41449—Overcharge in weight silver ore, claim No. 6744	10 88	
		$52 09

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS, ST. LOUIS, MO.

37058—Car repairs, May and September, 1912, bill No. 35128	$2 00	
40090— " bill No. C 39568	2 95	
41311— " October, 1912-February, 1913, bill No. 42311	8 29	
40906— " October 1st, 1912, to March 12th, 1913	4 24	
41665— " audit No. 44941	10 85	
42438— " bill No. 44476	2 06	
43241— " bill No. 47325	48	
43494— " bill No. 49822	8 45	
		$39 32

TEMISCOUATA RAILWAY, RIVER DU LOUP, QUE.

38377—Car service balance, October, 1912	$2 45	
38666—Car service balance, January, 1913	5 85	
		$8 30

TAXICABS, LTD., TORONTO.

42688—Taxicab, October 11th, 1912	$0 75	
		$0 75

TRANSCONTINENTAL PASSENGER ASSOCIATION, CHICAGO, ILL.

39977—"Digest of Passenger Fares and Divisions"	$80 00	
		$80 00

TOLEDO & WESTERN RAILWAY CO., TOLEDO, OHIO.

38381—Car service balance, October, 1912	$6 65	
37298—Car service balance, November, 1912	3 50	
		$10 15

J. TELLIER, HEASLIP, ONT.

38565—Telegraph poles	$155 40	
39589—Ties	73 90	
40018— "	26 25	
40018— "	43 26	
41293— "	28 92	
		$327 73

CHAS. H. TOTTY, MADISON, N.Y.

39794—Flowers for Engelhart greenhouse	$10 50	
		$10 50

TREMONT & GULF RAILWAY, WINNFIELD, LA.

38379—Car service balance, October, 1912	$7 35	
37062—Car repairs, July, 1912, audit No. 3329	2 04	
		$9 39

"TORONTO DAILY STAR," TORONTO, ONT.

40694—Advertisement, Cobalt station grounds	$28 50	
		$28 50

JAMES A. THOMAS, WATCH INSPECTOR, NORTH BAY, ONT.

37751—Travelling expenses, October and November, 1912	$17 40	
36940—Watch inspection for months of Oct. and Nov., 1912	24 00	
38839—Travelling expenses, December and January, 1913	12 50	
38066—Inspections, months of December, 1912, January and February, 1913	37 50	
40043—Travelling expenses, March, 1913	11 50	
40265—Watch inspection, month of March, 1913	18 00	
		$120 90

TEMISKAMING MINING CO., LTD., COBALT, ONT.

37625—Loss, box ore crusher parts en route, claim No. 5395	$5 70	
37627—Loss, one bundle ore bags, claim No. 5666	10 00	
		$15 70

AGENT, TIMMINS STATION, ONT.

38744—Outstanding account, loss of steel, claim No. 6038	$0 35	
		$0 35

TOWN OF TIMMINS, ONT.

38428—Water supplied water tank at Timmins station to Feb., 1913	$247 00	
43096—Water supplied water tank at Timmins station, March to September 30, 1913	320 15	
		$567 15

"TIMES" PRINTING CO., PETERBOROUGH, ONT.

40909—Advertisement, Cobalt station grounds	$21 60	
		$21 60

J. H. A. TAYLOR, NORTH BAY, ONT.

39900—Bread for Commissary	$0 90	
39984—Bread for Commissary	2 16	
43750—Bread for Commissary	72	
		$3 78

S. TEATER, EARLTON, ONT.

38163—Fence posts and braces	$26 88	
		$26 88

A. C. TWEED, McCOOL P.O.

40465—Ties	$151 50	
40014—Ties	132 18	
40018—Ties	79 47	
		$363 15

D. C. THOMSON, ORILLIA, ONT.

37541—Overcharge in weight on flour, claim No. 5260	$2 04	
		$2 04

S. P. TOWSEND & CO., ORANGE, N.J.

38203—Lawn mower	$4 00	
		$4 00

J. G. TURNEY, WAH-TAY-BEG, ONT.

40467—Ties	$104 73	
		$104 73

A. TEETS, MATHESON, ONT.

39461—Ties	$155 04	
		$155 04

JAS. TURCOTTE, NORTH BAY, ONT.

38776—Damage to bureau in transit, claim No. 6082	$3 50	
42967—Damage to bureau in transit, claim No. 6082	3 50	
		$7 00

GEO. E. TUCKETT & SON CO., HAMILTON, ONT.

37664—Stems and waste	$7 50	
		$7 50

GEO. C. THOMPSON, GOWGANDA, ONT.

41426—Shortage one bag oats and freight, claim No. 6416	$1 83	
		$1 83

TOWNSHIP OF TISDALE, SOUTH PORCUPINE, ONT.

36998—Dome road crossing	$197 38	
		$197 38

MRS. EMMELENE TAYLOR, MATHESON, ONT.

37818—Donation *re* assistance to settler's family, father deceased	$25 00	
		$25 00

B. & S. H. THOMPSON & CO., LTD., MONTREAL, QUE.

39581—Refund demurrage, claim No. 6185	$5 00	
		$5 00

E. TAYLOR, KELSO, ONT.

40467—Ties	$387 18	
40098—Ties	66 99	
40418—Ties	45 90	
		$500 07

THEODORE TAYLOR, TOMSTOWN, ONT.

41552—Loss account, plow point broken, claim No. 7129	$0 50	
		$0 50

TORONTO SALT WORKS, TORONTO, ONT.

41009—Salt	$69 00	
		$69 00

TEMISKAMING & NORTHERN ONTARIO RAILWAY, NORTH BAY—STORES ACCOUNT.

41422—Loss, two tower knuckles shortage, claim No. 7045	$5 20	
43424—Potatoes from Englehart Green House	11 00	
43748—Potatoes from Englehart Green House	71 00	
		$87 20

TEMISKAMING L. O. L. No. 60, NEW LISKEARD, ONT.

41718—Commission, tickets sold, account Orange celebration, July 12th, 1913	$113 40	
		$113 40

TISDALE DRUG STORE, TIMMINS, ONT.

42537—Loss account, shortage one box confectionery, claim No. 5925	$39 75	
		$39 75

OLE THORKELSON, NAHMA, ONT.

42735—Donation, bull alleged killed, M.P. 246½, August 19th, 1913	$25 00	
		$25 00

TORONTO FEDERATED ASSOCIATION OF LETTER CARRIERS, TORONTO, ONT.

42545—For advertising in official souvenir, 1913	$25 00	
		$25 00

EVA TITTENSOR, COBALT, ONT.

43111—Services rendered Commission September 27 to 30th, 1913	$8 67	
43060—Services rendered Commission, October, 1913	65 00	
		$73 67

THE TURNER CO., LTD., TORONTO, ONT.

42734—One gal. jar catsup, broken in transit, claim No. 6943	$1 00	
		$1 00

TEXAS & NEW ORLEANS R. R. CO. HOUSTON, TEXAS.

43297—Car repairs, June, 1913, audit No. 62397	$14 47	
43556—Car repairs, September, 1913	3 66	
		$18 13

UNION PACIFIC RAILROAD, OMAHA, NEB.

38385—Car service balance, October, 1912	$2 45	
38529—Car repairs, audit No. 195974	93	
37302—Car service balance, November, 1912	9 10	
39249—Car service balance, December, 1912	17 15	
38714—Ticket balance, January, 1913	22 63	
40461—Car repairs, May, August, 1912, bill No. 202310	10 24	
40154—Overcharge on silver ore, claim No 3829	85 07	
41319—Car repairs, December, 1912, to March, 1913	9 55	
40972—Car repairs, bill No. 205541	47	
41852—Car service balance, June, 1913	90	
42442—Car repairs, bill No. 208769	2 76	
43303—Car repairs, bill No. 212234	28	
		$161 53

UPPER ONTARIO STEAMBOAT CO., LATCHFORD, ONT.

37697—Freight and express on supplies to Elk Lake Branch, October, November, 1912	$379 60	
38417—Ticket balance, October, 1912	65 50	
37342—Ticket balance, November, 1912	21 50	
		466 60

UNITED TYPEWRITER CO., LTD., TORONTO, ONT.

37973—Stencilling, inspections, Underwood Typewriters, October (3) November (4)	$14 00
38035—Repairing Underwood typewriter, No. 142456	7 00
38205—Platens	8 13
36944—Letter "J" for Underwood, pica	50
38633—Rent of typewriter from December 23rd, 1912, to January 23rd, 1913	4 00
37416—Type bar letter "N" for Underwood typewriter for freight office	50
37418—M. L. Bond paper, blue linen backs	1 30
37668—Ribons, stencils, ink paper, etc.	31 02
38787—Ribbons, paper, etc	17 03
38068—Inspection of 4 typewriters, ribbons, carbon paper	15 00
38430—Pencil lengtheners	75
40405—Paper, overhauling Underwood's, No. 170234, 5, supplies	81 74
40329—Type bar and type	50
39680—Overhauling Underwood typewriter, No. 16879, 3, 14	7 00
39798—Type bar	50
39904—Ribbons	12 91
41067—Paper	5 16
41069—Repairs to typewriter	12 00
40572—Inspection of Underwood typewriters	12 00
41310—Type bar and overhauling machine	12 50
41366—Type bar and type complete	50
42225—Stationery	1 83
42281—No. 5 Oliver typewriter ribbons	12 66
41640—For copying, etc.	9 50
41972—Paper, ribbons, etc.	23 51
42222—Underwood typewriter, No. 581429, pica	70 00
42811—Inspecting four typewriters, July, August and Sept., 1913..	12 00
42813—Typing reports, 10½ folios, 10 copies	2 00

UNITED TYPEWRITER CO.—*Continued.*

42582—Stenographers' note books	$3 50	
42838—Impression paper, brushes, ink	10 45	
42898—Paper	17 25	
43426—Repairs to typewriters, No. 3370⅓, 14" pica	14 15	
43688—Ink pads, typewriter paper	16 00	
		$436 89

UNITED STATES STEEL PRODUCTS EXPORT CO., NEW YORK, N.Y.

38935—B. A. sheets, steel plates	$132 07	
39983—Steel plates	45 77	
38826—Steel plates	69 00	
42165—Steel plates	30 02	
43405—Steel channels	21 20	
		$298 06

UNION RAILROAD COMPANY. PITTSBURG, PA.

38383—Car service balance, October, 1912	$14 00	
37300— " " November, 1912	90 30	
39247— " " December, 1912	30 80	
39789— " " December, 1912	35	
38668— " " January, 1913	49 05	
39364— " " March, 1913	68 40	
40830— " " April, 1913	112 05	
42087— " " May, 1913	119 25	
41850— " " June, 1913	68 40	
42935— " " July, 1913	104 85	
43036— " " September, 1913	120 60	
		$778 05

UNCLAIMED WAGES PAID.

PIT. EASTMAN.

37595—Unclaimed wages, September, 1911	$55 27	
		$55 27

ALBERT WEISS ESTATE.

36648—Unclaimed wages due A. Weiss, deceased, for month of January, 1912, P. R. 106, No. 6	$41 55	
		$41 55

T. OLEMANY.

38769—Unclaimed wages, No. 194, June pay roll, No. 152	$13 47	
		$13 47

A. DINUALA.

39549—Unclaimed wages, April, 1912	$8 75	
		$8 75

S. GIADORE.

39551—Unclaimed wages, June, 1912	$7 70	
		$7 70

J. ICA.

39553—Unclaimed wages, June, 1912	$7 70	
		$7 70

M. DUBEC.

39755—Unclaimed wages, September, 1912	$8 93	
		$8 93

J. Deguire.

39845—Unclaimed wages, August, 1912, pay roll No. 150	$23 60	
		$23 60

M. Vincenzo.

39847—Unclaimed wages, Pay roll No. 108, January, 1910	$3 00	
		$3 00

J. Dominic.

39226—Unclaimed wages, June, 1912	$24 67	
		$24 67

E. Condusso (C. Ernesto).

40200—Unclaimed wages, Pay roll No. 148, May and June, 1912	$21 87	
		$21 87

D. Vidoni (V. Domenco).

40202—Unclaimed wages, Pay roll No. 148, May and June, 1912	$22 75	
		$22 75

R. Kane.

40244—Unclaimed wages, November, 1910	$4 00	
		$4 00

J. Simpson.

40252—Unclaimed wages, December, 1912	$36 06	
		$36 06

H. Kidekel.

41747—Unclaimed wages, October, 1910	$11 37	
		$11 37

Vandalia Railroad Co., Terre Haute, Ind.

37304—Car service balance, November, 1912	$6 30	
42089—Car service balance, May, 1912	3 15	
43498—Car service balance, November 12, January 13, ...	9 01	
		$18 46

Union Refrigerator Transportation Co. of Wisconsin, Milwaukee.

39251—Car service balance, December, 1912	$9 22	
		$9 22

United Coal Company, Pittsburg, Pa.

37312—Car service balance, November, 1912	$1 30	
		$1 30

Vicksburg, Shreveport and Pacific Railway, New Orleans, La.

37306—Car service balance, November, 1912	$6 30	
39255— " " December, 1912	4 20	
38672— " " January, 1913	90	
39454— " " March, 1913	5 85	
41321—Car repairs, December, 1912, bill No. 26719	44	
		$17 69

HARRY VISSERING & CO., CHICAGO, ILL.

40407—Bell ringers	$12 00	
		$12 00

UNITED CANADA, OTTAWA, ONT.

36592—Advertising	$50 00	
		$50 00

A. VAN KOUGHNET & CO., TORONTO, ONT.

37797—"Outlook" envelopes, large size	$52 25	
42692—Envelopes	65 24	
42814—Envelopes	55 00	
		$172 49

VERONA TOOL WORKS, PITTSBURG, PA.

39449—Track tools	$82 60	
40409—Track tools	81 08	
41223—Wrenches	9 13	
41216—Wrenches and bars	80 83	
41990—Levels and gauges	74 40	
43542—Track tools	76 22	
		$404 26

HENRY VERNON & CO., HAMILTON, ONT.

41492—Copies of North Bay Directory for 1913-14	$4 00	
		$4 00

UNION LUMBER CO., LTD., TORONTO, ONT.

42439—Spruce	$359 48	
		$359 48

VIRGINIAN RAILWAY CO., NORFOLK, VA.

38387—Car service balance, October, 1912	$1 75	
38477—Car repairs audit No. 6477	2 80	
37308—Car service balance, November, 1912	1 05	
39253— " " July, 1912	1 80	
38674— " " January, 1913	7 65	
39368— " " March, 1913	4 50	
42091— " " May, 1913	90	
42937— " " July, 1913	11 70	
43038— " " September, 1913	13 95	
		$46 10

UNION TANK LINE, NEW YORK, N.Y.

38389—Car service balance, October, 1912	$3 16	
37310— " " November, 1912	81	
37486— " " December, 1912	77	
38676— " " January, 1913	77	
39370— " " March, 1913	1 62	
41462— " " June, 1913	1 60	
43040— " " September, 1913	1 60	
		$10 33

VIRGINIA & SOUTH WESTERN RY., BRISTOL, TENN.

38670—Car service balance, January, 1913	$1 80	
39366— " " March, 1913	9 90	
41854— " " June, 1913	4 95	
		$16 65

UNITED COAL SALES CO., DETROIT, MICH.

38207—Smithing Coal	$61 40	
37666—Smithing Coal	61 40	
38196—Smithing Coal	62 40	
		$185 20

UNION STOCK YARDS CO. OF OMAHA, LTD., OMAHA, NEB.

41317—Car repairs, February, 1913	$0 38	
		$0 38

A. VALLIER, STURGEON FALLS, ONT.

36804—Damage to furniture, claim No. 5848	$5 00	
		$5 00

ELMER J. VARRETT, SUPERINTENDENT OF TRAFFIC DEPT., NEW LISKEARD, ONT.

38012—Travelling expenses, February, 1913	$4 00	
		$4 00

DR. E. G. VERNON, COCHRANE, ONT.

40696—Professional services rendered Jos. McCann, February 13th, 1913	$25 00	
		$25 00

C. H. VINT, HEASLIP, ONT.

42000—Switch sets	$11 20	
43240a—Ties	33 60	
		$44 80

VAN TUYL & FAIRBANK, PETROLEA, ONT.

38209—Working barrel	$15 00	
		$15 00

WARWICK BROS. & RUTTER, LTD., TORONTO, ONT.

37975—Bills collectible, forms	$22 00
36946—B.C. forms, telegram forms	37 00
38601—Pencils, copying books, etc.	50 94
37674—Envelopes and ticket books	247 38
38907—Plain copy sheets	6 00
39289—Stationery	3 78
38314—Forms, book covers	28 92
38436—Tickets	5 50
39791—Forms	21 00
40157—Envelopes, forms	139 00
39558—Pens, journal	10 05
39612—Forms	22 00
39684— "	69 00
39800— "	30 60
39802— "	60 00
40673— "	17 25
40699—Record book	9 00
40769—Record book and distribution forms	82 11
40809—Forms, pencils etc.	62 53
40891—Stationery supplies	48 00
40632—Pencils	3 53
41090—Way bills	14 00
41182—Paper	6 00
42335—Forms	72 50
41914—Forms and copy sheets	83 00
41974—Forms	4 00
42134—Forms, pens, etc.	16 86
43363—Stationery, forms	21 31

WARWICK BROS. & RUTTER, LTD., TORONTO, ONT.—*Continued.*

42584—Stationery	$9 00	
42900—Letter heads	15 35	
43104—Forms	72 50	
43240— "	14 00	
43690— "	51 94	
		$1,356 05

WABASH RAILROAD, ST. LOUIS, MO.

38479—Car repairs, bill No. R. 15217	$3 03	
38529—Car repairs, bill No. R. 17084	480 23	
37064—Car repairs, October, 1912, bill No. R. 17025	66 82	
38508—Car repairs, bills Nos. 26253, 26254	15 75	
41291—Car repairs, January, 1913, bill No. 2402	78	
40832—Car service balance, April, 1913	8 10	
40912—Car repairs, Nov. 25th, 1912, to March 27th, 1913	18 00	
42093—Car service balance, May, 1913	22 05	
41430—Overcharge in rate on ship't. mchry., claim No. 5059	14 84	
42444—Car repairs, bill R 39391	3 99	
		$633 59

WORLD'S ONLY DUSTLESS BRUSH CO., NORTH BAY, ONT.

37676—Brushes	$6 50	
41167— "	6 50	
42227— "	3 25	
		$16 25

ERNEST H. WINLOW, HEASLIP, ONT.

39483—S ½ lot, con. 2, Evanturel, 05 acres	$50 00	
		$50 00

A. E. WOODRUFF & CO., COBALT, ONT.

39925—Overcharge in rate, fruit, claim No. 4848	$1 00	
		$1 00

C. D. WINN, TORONTO, ONT.

41642—Cleaning and repairing rug	$4 00	
		$4 00

WHITMAN & BARNES MANUFACTURING CO., ST. CATHARINES, ONT.

38215—Hammers, files, cotters, drills	$83 11	
37672—No. 12, E.B.P., hammers	13 47	
39451—Chisels, etc.	33 35	
38252—Wrenches, cotters, etc.	82 56	
39614—Wrenches, keys and drills	106 26	
41225—Tools	62 46	
42331—Wrenches	19 00	
41992—Drills	15 33	
42224—Wrenches	13 50	
43573—Hammers	9 57	
		$438 61

J. T. WELBOURN, UNO PARK, ONT.

40020—Ties	$100 96	
40100—Ties	33 65	
41773—Ties	91	
		$135 52

L. C. Wideman, Englehart, Ont.

37629—Loss, paint, account damage in transit, claim No. 5769	$1 00	
42558—Shortage, stove pipes, in transit, claim No. 4902	2 40	
		$3 40

G. Whaley, Thornloe, Ont.

38163—Ties	$5 52	
		$5 52

Robt. Wakefield, Homer, Ont.

40467—Ties	$42 42	
38163—Ties	8 40	
		$50 82

Wabash, Pittsburg Terminal Ry., Pittsburg, Pa.

37066—Car repairs, October, 1912, audit No. R 18353	$28 89	
39263—Car service balance, December, 1912	35	
38686—Car service balance, January, 1913	18 00	
		$47 24

J. B. Watson, Cobalt, Ont.

40269—Services auditing accounts R. of W. Mines, Ltd., *re* royalty	$100 00	
		$100 00

Wheeling & Lake Erie Railroad, Pittsburg, Pa.

38391—Car service balance, October, 1912	$5 60	
37314—Car service balance, November, 1912	12 25	
39085—Car repairs, auditors, No. 36762	1 83	
39257—Car service balance, December, 1912	4 55	
38678—Car service balance, January, 1913	2 25	
40094—Car repairs, auditors, No. 38217	1 38	
40914—Car repairs, Jan. 27th to Feb. 16th, 1913	16 10	
41673—Car repairs, audit, No. 40256	48	
		$44 44

R. W. Watson, Cobalt, Ont.

39074—Fee *re* Cobalt Lake arbitration	$500 00	
		$500 00

West Side Belt Railroad, Pittsburg, Pa.

39259—Car service balance, December, 1912	$1 40	
39372—Car service balance, March, 1913	1 80	
		$3 20

Wabi-Kon Club, Laura A. Orr, Mgr., Timagami and Toronto.

40204—Advertisement in Wabi-Kon booklet	$25 00	
		$25 00

Andrew Wilson, Heaslip, Ont.

38163—Ties	$109 71	
		$109 71

Widnoon Coal Mining Co., Buffalo, N.Y. and Reynoldsville, Pa.

41731—Blacksmith coal	$124 95	
		$124 95

E. T. Wright & Co., Hamilton, Ont.

38211—Lanterns	$39 00	
38254—Lanterns	39 00	
42333—Lanterns	39 00	
		$117 00

Western Maryland Railway, Baltimore, Md.

37316—Car service balance, November, 1912	$12 25	
39261— " " December, 1912	10 15	
38680— " " January, 1913	12 60	
39374— " " March, 1913	7 65	
40012—Car repairs, auditors, No. 2094, Feb., 1913	1 20	
40910—Car repairs, Dec. 31st, 1912, to Jan. 9th, 1913	4 40	
42095—Car service balance, May, 1913	4 95	
41856— " " June, 1913	3 60	
42939— " " July, 1913	8 50	
43042— " " September, 1913	4 95	
		$70 25

Wood, Vallance & Co., Toronto, Ont.

37670—Emery wheel, dresser, cutters	$1 37	
39453—Tacks, etc.	2 00	
38434—Screws and buttons	2 93	
40411—Post hole augers	4 63	
39616—Ice axes	9 00	
41092—Shop tools	8 20	
42285—Drawer knobs	1 67	
41994—Machine screw plate	17 89	
43178—Crosby clips	11 10	
		$58 79

W. Warrell & Son, Cochrane, Ont.

41451—Overcharge in rate, feed, claim No. 6554	$2 26	
		$2 26

E. R. Watts & Son, Ltd., Ottawa, Ont.

40389—Prismatic eyepiece	$6 57	
40412—Repairing and overhauling and fitting stadia hairs to Dietzgen transit	17 50	
		$24 07

Eric Wilkie, Matheson, Ont.

38163—Ties	$47 75	
38163—Ties	83 57	
40465—Ties	27 78	
		$159 10

Westmoreland Coal Co., Philadelphia, Pa.

38682—Car service balance, January, 1913	$2 71	
39376— " " March, 1913	77	
40834— " " April, 1913	1 54	
42097— " " May, 1913	1 54	
		$6 56

John Watt, Porcupine, Ont.

39923—Loss, Account shortage one bag flour, claim No. 6174	$2 60	
41391—Loss, eggs and butter, claim No. 5775	23 54	
		$26 14

WABIS IRON WORKS, LISKEARD, ONT.

36812—Damage to cement mixer, claim No. 5817	$13 63	
41891—Siding rebate, Oct., 1912, to May, 1913, claim No. 7088	267 00	
		$280 63

WESTERN FREIGHT TRAFFIC ASSN., CHICAGO., ILL.

41578—Overcharges in rate on lumber, claim No. 6485	$29 48	
		$29 48

WICHITA FALLS & NORTH WESTERN RY., WICHITA FALLS, TEX.

39378—Car service balance, March, 1913	$0 45	
40838— " " April, 1913	5 85	
42101— " " May, 1913	4 50	
		$10 80

GEO. WHITTON, CHARLTON, ONT.

36616—Loss, one case sundries, claim No. 5120	$56 78	
39583—Loss, articles from case damaged in transit, claim No. 6285	4 60	
39585—Loss, on account of delay to three cases merchandise, claim No. 6463	15 00	
		$76 38

THOS. E. WARNER, NORTH BAY, ONT.

39023—Travelling expenses, January, 1913	$8 00	
38014—Travelling expenses, February, 1913	3 25	
42367—Travelling expenses, July, 1913	2 95	
		$14 20

R. WOODMAN MANFG. & SUPPLY CO., BOSTON, MASS.

39619—Ticket punches	$27 48	
		$27 48

WASHINGTON SOUTHERN RAILWAY, RICHMOND, VA.

41671—Car repairs, audit No. 5580	$2 05	
42446—Car repairs, bill No. 5950	14 14	
		$16 19

WATSON, JACK & CO., MONTREAL, QUE.

38161—Bluestone	$54 00	
39457—Bluestone	114 00	
39438—Insulators	183 46	
41916—Insulators	6 87	
		$358 33

WIDDIFIELD STATION, WIDDIFIELD, ONT.

41947—Hard wood (3 cords)	$9 00	
		9 00

WEST DISINFECTING CO., TORONTO, ONT.

38213—Protectus fluid	$20 00	
39455—Disinfectant	25 00	
38432—Chloro-Naptholeum	15 00	
42283—Disinfectant	76 00	
		$136 00

JOHN WILSON, MCCOOL P.O., ONT.

42977—Donation re alleged loss on account of fire, Elk Lake Jct., June 11th, 1913	$100 00	
		$100 00

WELLAND VALE MANUFACTURING CO., ST. CATHARINES, ONT.

41071—Garden tools, scythes	$36 80	
41312—Scythes and snaths	57 90	
		$94 70

THOS. S. WOOLINGS, ENGLEHART, ONT.

39682—Cartage, freight and express	$4 35	
		$4 35

WINSTON-SALEM SOUTHBOUND RY. CO., WILMINGTON, N.C.

40840—Car service balance, April, 1913	$5 40	
		$5 40

WISCONSIN & NORTHERN RAILROAD CO., OSHKOSH, WIS.

38688—Car service balance, January, 1913	$1 35	
39380—Car service balance, March, 1913	90	
		$2 25

R. R. WOODS, ELK LAKE, ONT.

36846—Supplies furnished during months of September and October, 1912	$7 60	
37124—Supplies furnished during months of November and December, 1912	5 40	
38376—Supplies furnished during month of January, 1913	53 60	
40387—Supplies furnished during month of February, 1913	11 70	
		$78 30

F. P. WEAVER COAL CO., BUFFALO, N.Y.

37631—Overcharge on reconsignment, claim No. 5613	$6 74	
38905—Duty and brokerage on coal, car B. R. & P., No. 15179	19 05	
38780—Overcharge in weight, coal, claim No. 6359	1 63	
39929—Overcharge in weight, coal, claim No. 6358	3 38	
39931—Overcharge in weight, coal, claim No. 5611	1 79	
39943—Overcharge calculation, coal, claim No. 6277	36 59	
38900—Overcharge in weight, coal, claim No. 6360	38	
38952—Overcharge in rate, coal, claim No. 6583	2 60	
38954—Overcharge in weight, coal, claim No. 5973	8 42	
39006—Overcharge in rate, coal, claim No. 5933	19 74	
40188—Refund account, charges collected twice, claim No. 6669	186 84	
41893—Overcharge on coal, claims Nos. 6932 and 6992	124 99	
41428—Overcharge in freight, coal, claim No. 6278	27 40	
42541—Overcharge in weight on coal, claim No. 6702	16 24	
42543—Loss account, shortage of coal from car in transit, claim No. 4980	25 26	
42691—Overcharge in advances, coal, claim No. 6417	8 00	
42560—Refund of 50% demurrage assessed on cars bunched for convenience of train service	86 00	
42562—Overcharge in freight, coal, claim No. 7202	158 77	
42564—Overcharge in rate, coal, claim No. 7289	60 24	
42660—Overcharge in rate, coal, claim No. 7089, March 20–April 5	21 40	
42662—Overcharge in weight, coal, claim No. 6940	1 30	
		$816 76

J. WILDMAN, MATHESON, ONT.

38163—Ties	$51 87	
		$51 87

GUSTAV, WIEDEKE & CO., DAYTON, OHIO.

38217—Tube expander	$3 69	
39906—Tube expanders	6 48	
41227—Tools	16 44	
		$26 61

WALTON & FOSTER, NEW LISKEARD, ONT.

37778—Damage to mirror and barbers chair, claim No. 5910	$7 00	
		$7 00

A. WILLIAMS, HEASLIP, ONT.

37938—Ties	$137 46	
39589—Ties	93 09	
40018—Ties	45 42	
40018—Fence posts . .	13 60	
41293—Fence posts . .	14 80	
		$304 37

S. WEST, MCCOOL P.O., ONT.

40467—Fence posts . .	$94 72	
40020—Fence posts . . .	14 00	
		$108 72

P. WENNESHEIMER, MCCOOL P.O., ONT.

40020—Ties	$29 09	
40100*a*—Ties . . .	9 70	
		38 79

GEO. WOODS, CHARLTON, ONT.

40020—Ties	$281 81	
40100—Ties	86 67	
40100—Ties	93 94	
		$462 42

W. WILSON, EARLTON, ONT.

39463—Ties	$155 04	
40100—Ties	238 35	
		$393 39

JOSEPH WOOLLINGS, ENGLEHART, ONT.

42014—Executing papers, Winlaw and T. & N. O. siding in Evantural, and two affidavits, Burger and H. H. Cook ...	$3 50	
		$3 50

J. J. WEBER, LEIPZIG, GERMANY.

40267—Advertisement in the Canada special number Illustrirte Zeitung, No. 6339	$250 00	
		$250 00

WOMAN'S INSTITUTE OF ONTARIO, EARLTON, ONT.

39242—Donation towards erection of meeting hall	$10 00	
		$10 00

ROBT. WHYTE, HOMER SIDING, ONT.

40100*a*—Ties	$57 78	
		$57 78

A. WATSON, MONTEITH P.O.

41293—Ties	$148 98	
		$148 98

WESTERN RAILWAY OF ALABAMA, ATLANTA, GA.

38684—Car service balance,	January, 1913	$1 75	
39382— "	February and March, 1913	7 20	
40836— "	April, 1913	6 75	
42099— "	May, 1913	11 70	
			$27 40

WESTERN ALLEGHENY RAILROAD, PITTSBURG, PA.

38729—Car service balance, October, 1912	$0 35	
		$0 35

WESTERN PACIFIC RAILWAY, SAN FRANCISCO, CAL.

40463—Car repairs, August, 1912, bill No. 1267	$1 20	
43500—Car repairs, June, 1912	3 84	
		$5 04

W. H. WILSON, HAILEYBURY, ONT.

40350—Shovels	$25 00	
		$25 00

C. G. WATSON, ENGINEERING DEPT., NORTH BAY.

40831—Travelling expenses, May, 1913	$3 25	
		$3 25

WISCONSIN & MICHIGAN RAILWAY, PESHTIGO, WIS.

42941—Car service balance, July, 1913	$0 45	
43044—Car service balance, September, 1913	2 70	
		3 15

S. WILLOWS & CO., NEW LISKEARD, ONT.

42689—Refund of stop off, charge account service not performed	$3 00	
		$3 00

TOWNSHIP OF WIDDIFIELD, WIDDIFIELD, ONT.

42737—For arrears in taxes due on W. ½ Lot 23, Con. 3, Widdifield	$24 54	
		$24 54

WHITE RY. SIGNAL CO., LTD., TORONTO, ONT.

42478—Brake shoes	$15 12	
		$15 12

SELBY WILSON, NEW LISKEARD, ONT.

42700—For full release and discharge from all claims and demands for injuries alleged to have been received, September 10th, 1913	$41 38	
		$41 38

WESTERN CLASSIFICATION COMMITTEE, CHICAGO, ILL.

43238—Subscription	$2 00	
		$2 00

WESTINGHOUSE, CHURCH, KERR & CO., NEW YORK, N.Y.

43384—Services in connection with plans for general shops, for motive power and car departments	$1,840 57	
		$1,840 57

THE YOUNG CO., LTD., NORTH BAY, ONT.

38433—Groceries, month of October and November, 1912	$1,540 35	
37678—Groceries, month of November and December, 1912	295 16	
37754—Shortage, one bag of flour, claim No. 6031	2 55	
39459—Supplies, as per statement attached to voucher	723 83	
38256—Hay and groceries, November, 1912, to February, 1913	977 71	
38316—Groceries	141 90	
38786—Pail mincemeat damaged, claim No. 6107	1 90	
39939—Loss, one box cocoa short, claim No. 5987	4 68	
39941—Shortage on bag prime beans, claim No. 5906	5 80	
39214—Overcharge in weight, claim No. 6537	2 44	
39618—Dutch cleanser and lime	7 60	
39744—Lard	9 38	
39804—Groceries	48 87	
39910— "	203 48	
39986— "	495 85	
39988— "	561 08	
41073— "	533 10	
41323— "	396 65	
40352—Hams	29 20	
40512—Provisions	168 88	
41094— "	538 41	
41218— "	291 12	
42287— "	606 33	
42337— "	313 07	
41580—Loss account, shortage, onions, claim No. 6243	3 00	
42467—Groceries	227 17	
41976—Hay	156 00	
41998—Groceries	179 74	
42258—Groceries	521 95	
42480—Provisions	51 98	
43101—Groceries	51 65	
42568—Loss account, shortage, one box raisins, claim No. 6919	3 75	
43407—Groceries	896 39	
43501—Groceries	417 66	
43180—Provisions	105 67	
43428—Hay	162 98	
43570—Provisions	544 52	
43788—Groceries	92 23	
		$11,314 09

W. J. YATES, NEW LISKEARD, ONT.

37752—Loss on whiskey and gin, damage to furniture, claims Nos. 5907-5912-5950-5099-6100	$31 36	
37780—Loss, one bottle gin and freight charges, account damage, claim No. 6101	80	
37633—Loss on whiskey and gin, claims Nos. 5649-5598-5601-5946-5595	4 76	
38782—Loss on whiskey, claims Nos. 6435-6441-6180-6027	10 72	
38784—Loss on whiskey and freight charges, claims Nos. 5898-6175	5 11	
39933—Loss on liquors, claims Nos. 6054-6176-6202-6411	3 12	
39935—Loss on liquors, claims Nos. 6178-6182-6177	7 15	
39937—Loss on liquors, claims Nos. 6028-6196-6456	7 26	
38902—Loss, one bottle Imperial whiskey and freight charges	68	
39008—Loss on brandy and whiskey, claims Nos. 6622 and 6628	2 20	
39216—Loss on brandy, whiskey and gin, claims Nos. 6608-6437-6607-6604-5	3 96	
40613—Loss, whiskey, claims Nos. 6621-6627-6629-6624-6633-6745-6751	11 34	
40190—Loss on brandy and whiskey, claims Nos. 6752-6623-6602	4 23	
41471—Loss on whiskey, shortage, claim No. 6439	7 40	
41473—Loss on liquors, broken in transit, claims Nos. 6729-6748-6747-6754	13 80	
41895—Loss, three cases gin and two bottles liquor, claim No. 6641	20 97	
41386—Claims as per statement, December, 1912, to May, 1913	18 80	
41674—Loss on whiskey and freight charges, claims Nos. 7083-7067-7052	8 58	

W. J. Yates, New Liskeard, Ont.—*Continued.*

42545—Loss of whiskey, damaged in transit, claims Nos. 7021-81-71	$9 51	
42693—One bottle rum, broken in transit, claim No. 7241	72	
42566—Loss on liquors, claims Nos. 7239-6606-6474-6601-6615-7248-7244-7237-7238	25 98	
42738—Loss, one bottle rye, broken in transit, claim No. 7316	58	
		$199 03

William Young (Roadmaster), North Bay, Ont.

37853—Travelling expenses, November, 1912	$2 90	
36886— " " December, 1912	1 90	
39025— " " January, 1913	6 20	
38016— " " February, 1913	4 65	
40065— " " March, 1913	1 95	
39850— " " April, 1913	2 05	
41150— " " May, 1913	3 60	
41244— " " June, 1913	5 35	
42405— " " July, 1913	7 80	
42308— " " August, 1913	7 20	
43613— " " September, 1913	9 40	
		$53 00

Frederick Young, Chicago, Ill.

38219—Car heaters	$288 00	
		$288 00

Young & McEvoy, Toronto, Ont

38563—Arbitrators' fees, stenographer's fees, etc., *re* Cobalt Lake mining arbitration	$1,771 14	
		$1,771 14

Wm. Young, Cochrane, Ont.

40469—Ties	$509 78	
41511— "	319 20	
41511— "	46 36	
43240*a*— "	100 02	
		$975 36

Yale & Towne Manufacturing Co., New York, N.Y.

39908—Hand wheel	$2 88	
41996—Sheave	2 99	
		5 87

E. A. Zakibe, Cobalt, Ont.

36806—Settlement of claim No. 5740, shortage, one case rubbers	$12 00	
		$12 00

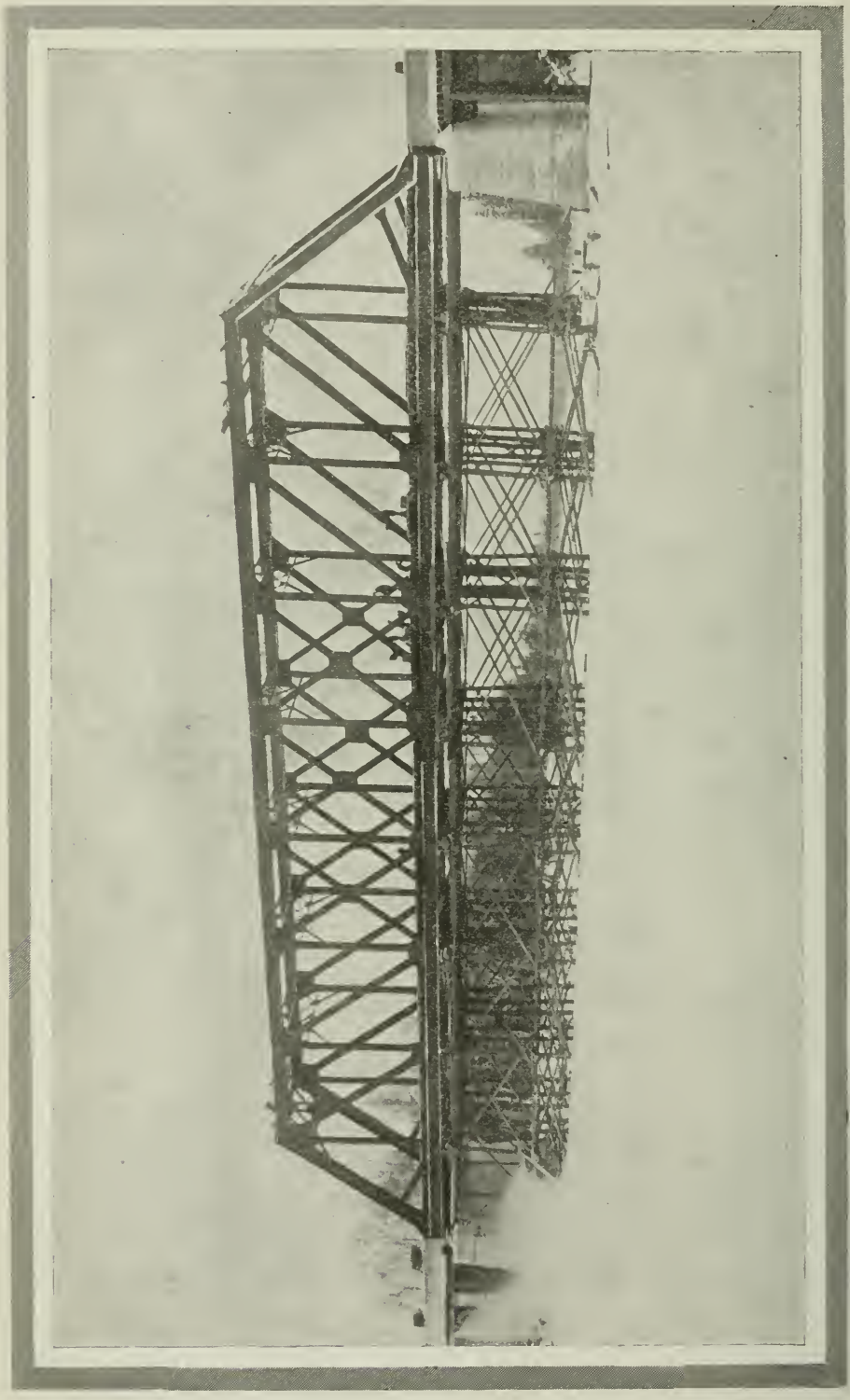
Grand total accounts, payable fiscal year ending October 31st, 1913	$3,230,149 55
Less accounts in suspense	924 58
Total	$3,229,224 97

DISTRIBUTION OF ACCOUNTS PAYABLE, FISCAL YEAR 1913, UNDER THE SEVERAL HEADINGS PROVIDED FOR BY CLASSIFICATION INTERSTATE COMMERCE COMMISSION.

Maintenance of ways and structures	$4,722 05
Maintenance of equipment	2,209 35
Traffic expenses	5,502 90
Transportation expenses	30,522 87
General expenses	24,775 70
Overcharges	14,296 90
Shop stock	285,425 57
Coal stock	211,457 31
Oil and waste stock	13,060 52
Stationery stock	11,260 34
Tie stock	87,325 10
Rail stock	152,513 63
Foreign freight	440,810 68
Foreign tickets	59,299 53
Car service	48,326 08
Construction	51,047 43
Additions and betterments	25,470 51
Elk Lake Branch	128,374 43
Porcupine Branch	2,189 59
Iroquois Falls Branch	25,239 97
James Bay Exploration	242 85
Joint terminals	1,988 14
All roads proportion	1,559 65
Payrolls	1,218,473 04
Insurance	33,457 05
Rolling stock	10,411 06
Switching	2,271 81
Freight	6,791 20
Townsites	4,740 36
Accounts collectible	52,127 55
Sidings	917 04
Passenger revenues	2,894 86
Ore royalties	326 33
Working expense account	2,608 52
Foreign telegraph	9,424 67
Miscellaneous	8,084 96
Treasurer of Ontario	250,000 00
Total	$3,230,149 55
Less accounts in suspense	924 58
Total	$3,229,224 97

SUMMARY.

Balance accounts payable, November 1st, 1912	$373,474 42	
Accounts payable fiscal year 1913, as per statement above	3,229,224 97	
	$3,602,699 39	
Less accounts cancelled to October 31st, 1913	16,836 75	
	$3,585,862 64	
By cash payments, fiscal year 1913		$3,044,031 39
Balance outstanding as per General Balance Sheet		541,831 25
	$3,585,862 64	$3,585,862 64



T. & N. O. bridge in course of erection, Montreal River, Elk Lake.

Contracts, Agreements, Etc.

CONSTRUCTION OF ALL STEEL PASSENGER CARS.

EQUIPMENT.

Two trains, plus three extra cars.
Three First-class Coaches.
Two Second-class Coaches.
Three Combination Smoking and Second-class Coaches.
Three Combination Baggage and Mail Cars.
Two Combination Baggage and Express Cars.
Prices f.o.b. North Bay, Ont.

QUOTATIONS.

National Steel Car Company, Hamilton, Ont.	$321,152 00
Barney & Smith Car Company, Dayton, Ohio. (Freight charges approximated.)	323,546 60
Pullman Company, Limited, Pullman, Illinois. (Freight charges approximated.)	271,959 10
American Car and Foundry Company, Jeffersonville, Ind. (This tender, having been received too late, was not considered.)	287,683 50

Contract awarded the Pullman Company, Limited.

ARTICLES OF AGREEMENT made in duplicate this twenty-ninth day of of August, in the year of our Lord one thousand nine hundred and thirteen.

BETWEEN

THE PULLMAN COMPANY, a corporation duly organized under the laws of the State of Illinois, hereinafter called the Contractor,

and

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. In this contract the word "Inspector" shall mean the Inspector for the time being appointed by the Commission to represent and act for the Commission in the supervision of the construction and in the inspection and certification of the cars herein referred to,

2. The Contractor will supply and provide all and every kind of work, labor, materials, articles and things whatsoever for the due construction and completion and will well and duly build and complete in a perfect and workmanlike manner the following All Steel Cars, that is to say: Three First Class Passenger Coaches, Two Second Class Passenger Coaches, Three Combination First and Second Class Smoking Cars, Three Baggage and Mail Cars and Two Baggage and Express cars, with all necessary appliances for use on the line of railway of the Commission in strict compliance with the specifications relating thereto, (blue prints of which are signed upon the execution hereof for identification by the Manager of the Sales Department of the Contractor and by the Secretary of the Commission), and in strict compliance with the plans and drawings relating to such specifications (save and except that the Stone Lighting Equipment with "Tonum" cells, mentioned in said specifications, shall be furnished, and the said Cars equipped therewith, by the Commission) to the complete satisfaction of the Inspector, and the Contractor will deliver said Cars completed to the Commission f.o.b. on the railway tracks at the Contractor's works in Pullman, Illinois, during the month of May, A.D. 1914.

3. The Contractor will furnish and deliver to the Commission at Toronto without extra charge two complete sets of blue prints of all detail plans of said Cars and Coaches and until delivery of such blue prints the Contractor shall not be deemed for the purpose of this contract to have delivered said Cars and Coaches or to be entitled to payment therefor.

4. The Inspector shall be the sole judge of all work and material done and supplied under this contract and his decision on all questions in dispute with regard to any such work or material shall be final and the whole work shall be executed to his satisfaction as evidenced by his certificate in writing, which certificate shall be a condition precedent to the right of the Contractor to be paid therefor.

5. The Inspector and all persons from time to time authorized by him in that behalf shall have free entry and access to the works of the Contractor at all times while this contract is being performed and shall have all reasonable facilities afforded to him and his representatives as aforesaid to satisfy him that same is being carried out and performed in accordance with this contract.

6. The acceptance and payment for one or more of said Cars or Coaches shall not be considered as any waiver of the obligations of the Contractor with reference to the other or others of them.

7. The Commission in consideration of the premises covenants with the Contractor that the Contractor from time to time and in all respects having fulfilled and performed the provisions of this contract on the Contractor's part intended to be fulfilled and performed will be paid for and in respect of the said cars and coaches as follows: For said Three First Class Passenger Coaches the sum of Forty-nine thousand eight hundred and eighteen dollars ($49,818.00); for said Two Second Class Passenger Coaches the sum of Thirty-two thousand five hundred and seventy-six dollars ($32,576.00); for said Three Combination First and Second Class Smoking Cars the sum of Forty-nine thousand one hundred and eighty-eight dollars ($49,188.00); for said Three Baggage and Mail Cars the sum of Thirty-six thousand four hundred and twenty-three ($36,423.00); for said Two Baggage and Express Cars the sum of Twenty-one thousand four hundred and thirty-two dollars ($21,432.00); making a total for all of said Cars and Coaches of One hundred and eighty-nine thousand four hundred and thirty-seven dollars ($189,437.00); payments to be made in cash in either New York or Chicago funds on presentation of invoices upon Cars being shipped after final acceptance of same by the Inspector.

IN WITNESS WHEREOF the parties have caused these presents to be executed under their respective corporate seals and under the hands of the proper officers in that behalf.

ATTEST.
By
Secretary.

THE PULLMAN COMPANY,
BY J. S. RUNNELL,
President.

ATTEST.
BY A. J. MCGEE,
Secretary.

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION.
BY J. L. ENGLEHART,
Chairman

Tenders for grading Cochrane Yard received as follows:—

	Common Excavation within limit of free haul.	Overhaul.
Macdougall & McCluskey	27½ cents per cu. yd.	¾ cents per cu. yd. per 100 ft.
G. L. Campbell	36 " "	
W. S. Tomlinson	35 " "	
John Marsch	42 " "	2 cents per mile.

Contract awarded to Macdougall and McCluskey.

THIS AGREEMENT made (in triplicate) the 30th day of April in the year of our Lord one thousand nine hundred and thirteen.

BETWEEN:

BURTON MacDOUGALL, MICHAEL T. McCLUSKEY AND GEORGE LENNOX MATTICE, carrying on business in co-partnership under the firm name of MacDOUGALL & McCLUSKEY, hereinafter called the Contractors,

and

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH AS FOLLOWS:

In consideration of the covenants and agreements hereinafter contained and to be performed by the Commission and of the prices hereinafter mentioned, the Contractors hereby covenant and agree with the Commission as follows:

1. In this agreement the word "work" or "works" shall, unless the context requires a different meaning, mean the whole of the work and materials, matters and things required to be done furnished and performed by the Contractors under this agreement.

2. The words "Engineer" or "Chief Engineer" when used in this agreement or in the specifications hereinafter mentioned shall mean the Chief Engineer of the Temiskaming and Northern Ontario Railway Commission for the time being acting as such either directly or through the Assistant Chief Engineer, Division Engineer, Assistant Engineer, Resident Engineer or Inspector, having immediate charge of the work or of that portion thereof limited by the particular duties entrusted to him. All instructions and directions or certficates given or decisions made by anyone acting under the Authority of the Chief Engineer shall be subject to his approval and may be cancelled, altered, modified and changed as he may see fit. In all cases where the Contractors are dissatisfied with the decision of the Engineer or Inspector in immediate charge of the work, an appeal to the Chief Engineer may be made. It is declared and agreed that it shall not be in the power of the Chief Engineer or of any Engineer or Inspector to waive any of the provisions of this agreement and no waiver of any such shall on any pretence be claimed by the Contractors.

3. Whenever in this agreement it is stipulated that anything shall be done or performed by either of the parties hereto it shall have the same effect and be construed as if the said party had thereby entered into a covenant with the other party to do or perform the same, and that any such covenant had been expressly made and entered into not only by for or on behalf of the parties hereto respectively, but also by for and on behalf of their respective executors, successors, administrators and assigns as the case may be.

4. The Contractors will at their own expense furnish all and every kind of labor, tools, machinery and other plant services and (save as herein otherwise provided) all material whatsoever necessary for the due execution and completion of, and will fully construct perform execute and complete in the most thorough workmanlike and substantial manner in every respect to the satisfaction and approval of the Chief Engineer (all the work of the different kinds hereinafter mentioned required in the construction of the roadbed of a re-location of the main-line Chainage stations 0 to 143 and enlargement of the yards of the Commission's Railway at Cochrane) including all work indicated in the plan and profile marked "A" and "B" respectively (which for indentification are signed by the contractors and secretary of the Commission on the execution hereof) and all other work connected with such re-location of the main line and enlargement of the yard at Cochrane which shall be required by the Engineer in strict compliance with the standard printed specifications of the Commission dated February 3rd, 1912, so far as the said specifications are applicable to the classes of work required to be done in connection with such re-location of the main line and enlargement of the yard at Cochrane and subject always to any modification of said specifications made by the terms of these presents to be completely finished and delivered to the Commission approved by the Chief Engineer on or before the first day of August, 1913.

5. Time shall be of the essence of this agreement.

6. The said work shall be immediately commenced after the execution of this agreement and shall be proceeded with continuously and diligently and under the personal supervision of the Contractors until completed. The work shall be carried on and prosecuted in all its several parts in such a manner and at such points and places as the Chief Engineer shall from time to time direct and to his satisfaction but always according to the provisions of this agreement and if no direction is given, then in a careful prompt and workmanlike manner, according to this agreement.

7. This agreement shall not be assigned nor shall the said work or any part thereof be sub-contracted without the written consent of the Chief Engineer to every such assignment or sub-contract.

8. The Contractors shall in all things conform to and comply with the instructions of the Chief Engineer. Every facility shall at all times be given by the Contractors to the Chief Engineer and to any Engineer or Inspector appointed by him to examine and inspect the materials provided by the Contractors used or being used in the work as done and being done and all orders of the Chief Engineer or the Engineer or Inspector as to the fitness or unfitness of the material or work shall be obeyed by the Contractors. All work and materials shall be subject to

the approval of the Chief Engineer and any work or material which in the opinion of the Chief Engineer is not of the character quality dimensions or design required by the plans or specifications or which is in the judgment of the Chief Engineer otherwise in any manner defective imperfect or insufficient shall be replaced or remedied when pointed out to the Contractors by the Chief Engineer and shall be made good and sufficient by the Contractors at their own expense and to the satisfaction of the Chief Engineer who shall have the power and whose duty it shall be to have any defective work or material taken out and rebuilt, or replaced at the expense of the Contractors. Any omission by the Chief Engineer to disapprove of or reject any insufficient or imperfect work at the time of any estimate shall not be deemed an acceptance of such work or material.

9. The Chief Engineer shall be at liberty at any time either before the commencement or during the construction of the work or any portion thereof. to order any extra work to be done. and to make change or alteration which he may deem expedient in the alignment or grade of the railway or in the dimensions nature location or position of the works or of any part or parts thereof or in any other thing connected with the works whether or not such changes increase or diminish the work to be done or the cost of doing the same and the Contractors shall immediately comply with all written directions of the Chief Engineer in that behalf, but the Contractors shall not make any change in or addition to or omission or deviation from the works and shall not be entitled to any payment for any change addition deviation or any extra work unless such change addition omission deviation or extra work shall have been first directed in writing by the Chief Engineer and notified to the contractors in writing nor unless the price to be paid for any addition or extra work shall have been previously fixed by the Chief Engineer in writing, and the decision of the Chief Engineer as to whether any such change or deviation increases or diminishes the cost of the work and as to the amount to be paid or deducted as the case may be in respect thereof shall be final, and the obtaining of his decision in writing as to such amount shall be a condition precedent to the right of the contractors to be paid therefor. If any such change or alteration shall in the opinion of the Chief Engineer materially affect the cost of doing the work he shall affix or determine the price to be paid either above or below the prices hereinbefore provided to be paid for such work, as the case may be, so as to do substantial justice to both parties, and his decision as to the amount to be fixed for the price of such work shall be final.

10. All the clauses of this agreement shall apply to any changes additions omissions deviations or extra work in like manner and to the same extent as to works contracted for and no changes additions deviations omissions or extra work shall annul or invalidate this agreement.

11. If any change or deviation in or omission from the works be made by which the amount of work to be done shall be decreased, no compensation shall be claimable by the contractors for any loss of anticipated profits in respect therefor.

12. All claims for extra work or material must be presented to the Chief Engineer for allowance at the end of the month in which the same shall have been done or furnished and shall, if allowed by the Chief Engineer, be included in the estimate for that month. otherwise all claims therefor shall be deemed to

be absolutely waived by the contractors and the Commission shall not be required to allow or pay for the same unless in the judgment of the Commission under the circumstances of the case it is reasonable and proper to do so.

13. The Chief Engineer shall be the sole judge of work and material in respect of both quantity and quality and his decision on all questions in dispute with regard to work or material shall be final and no work or extra or additional works or changes be deemed to have been executed nor shall the contractors be entitled to be paid for the same unless the same shall have been executed to the satisfaction of the Chief Engineer as evidenced by his certificate in writing. This certificate shall be a condition precedent to the right of the Contractors to be paid therefor.

14. The Commission will supply and provide the use free of charge and will deliver to the Contractors f.o.b. Cochrane the ties, steel rails, fastenings and switch material necessary for the tracks to serve the Contractors' steam shovel, and the Commission shall further supply the Contractors with coal for their steam shovel and locomotives at the cost price thereof to the Commission delivered at Cochrane.

15. The Commission shall have the right to suspend operations from time to time at any particular point or points or upon the whole of the work or to direct that the force employed on the work shall be diminished and the Contractors upon being requested in writing so to do by the Commission shall stop the work or reduce the force as the case may be in accordance with such written request, and the Contractors shall have no claim for damage by reason thereof. Such writing shall be signed by the Chief Engineer and delivered to the Contractors or to some person on the work representing the Contractors at least three days previous to such stoppage of work or reduction of force.

16. The Contractors shall not have nor make any claim or demand or bring any action against the Commission for any damage which they may sustain by reason of any delay in the progress of the work, arising from the acts of any of the Commission's agents and it is agreed that in the event of any such delay the contractors shall have such further time for the completion of the works as may be fixed in that behalf by the Chief Engineer.

17. No delay within or beyond the period herein specified for completing the said work shall vitiate or void this agreement or any part thereof, or the obligation hereby imposed upon the Contractors or shall make void or in any wise impair or affect any current or other bond or security for the performance of this agreement, and all the covenants and agreements in this agreement and in the said specifications contained shall apply to this agreement and to the said work until the said work is finally completed and accepted, notwithstanding the fact that such work is not completed within the time specified herein for such completion.

18. The Contractors shall be at the risk of and shall bear all loss or damage whatsoever from whatsoever cause arising which may occur to the works or any of them until the same shall be fully and finally completed and delivered up to and accepted by the Commission; and if any such loss or damage shall occur before such final completion, delivery and acceptance, the Contractors shall immediately at their own expense repair, restore and re-execute the work so damaged.

19. The Contractors and their agents, laborers and all others employed by them or under their control shall use due care that no person or property is injured or any rights infringed in the prosecution of the said work, and the Contractors shall be responsible for and will pay all damages claimable by any person or corporation whatsoever in respect of any injury to persons or property or in respect of any infringement of any right whatsoever including damage by fire, occasioned in their carrying on of the said works or by any neglect or misfeasance or non-feasance on their part or on the part of their servants or employees, and shall and will at their own expense make such temporary provisions as may be necessary for the protection of persons and of lands, buildings, animals or other property or to prevent the interruption of the traffic on any private or public road, or for the uninterrupted enjoyment of all rights of persons or corporations in and during the performance of the said works.

20. In case any sum due for the labor of any foreman, workman or laborer or for the use of any plant employed upon or in respect of the said works or any of them or the price of any materials or supplies purchased for account of the Contractors for the said work remains unpaid, the Chief Engineer shall notify the Contractors to pay such sum and if two days elapse and the same be not paid the Commission may pay such sum and the Contractors covenant with the Commission to repay at once any and every sum so paid and if the Contractors do not repay the same within two days the Commission may deduct the amount or amounts so paid by it from any sum that may then or may thereafter be or become due by the Commission to the Contractors.

21. The Contractors hereby authorize and empower the Commission or its solicitors to defend, settle or compromise any action or suit claim lien or demand which may be brought against the Commission for or by reason of any act or default of the Contractors as the Commission or its solicitors may deem expedient, and the Contractors hereby agree to ratify and confirm all the said acts of the Commission or its solicitors in that behalf and to pay to the said solicitors on demand their reasonable costs of defending such suits or claims as they may deem it expedient to defend, and that such costs, together with any damages so settled or agreed upon by the Commission or its solicitors and any claimant or the amount of any judgment recovered against the Commission in the premises will forthwith upon the same being ascertained be paid by the Contractors and in default of their paying the said damages and costs or any portion thereof on demand, the same may be deducted from any moneys payable by the Commission to the Contractors on any account whatever and the balance thereof if any may be recovered from the Contractors as money paid to their use.

22. The Contractors shall not bring nor permit to be brought anywhere on or near the said work any spirituous or intoxicating liquors and if any foreman laborer or other employee of the Contractors shall in the opinion of the Chief Engineer be intemperate disorderly incompetent wilfully negligent or dishonest in the performance of his duties, he shall on the direction of the Chief Engineer be forthwith discharged and the Contractor shall not employ or permit to remain upon the work any person who shall have been discharged from the said work for any or all of the said causes.

23. The Contractors have deposited with the Commission the sum of two thousand dollars in cash (the receipt whereof is hereby acknowledged) as security

for the due performance and observance by the contractors of all the terms, provisions and conditions of this contract and in or towards indemnification of the Commission in respect of any loss or damage which it shall or may sustain or be put to in the premises; provided that if the Contractors shall hereafter furnish a bond in form satisfactory to the Commission with a Surety or Sureties approved of by the Commission in the penal sum of two thousand dollars as security for the due performance of this contract, the said sum of two thousand dollars without interest shall thereupon be returned to the Contractors.

24. In consideration of the faithful performance by the Contractors of all and singular the covenants and agreements herein contained the Commission hereby covenants and agrees with the Contractors that it will well and truly pay them on the full completion by them of all the work to be done under this agreement in the manner and within the time herein specified and limited for the completion thereof to the satisfaction of and subject to acceptance by the Chief Engineer, and subject also as herein provided, the following sums and prices, namely:

Description of Work.	Measure.	Rate.
All excavation between construction stations 103 and 130	Per cu. yd.	$0 27½
For excavation beyond construction stations 103 and 130, for solid rock	Per cu. yd.	1 40
Loose rock	Per cu. yd.	0 50
Common excavation	Per cu. yd.	0 35
Cleaning	Per acre	40 00
Close cutting	Per acre	25 00
Grubbing	Per acre	75 00
Overhaul on material excavated between construction stations 103 and 130 where same is by direction of the Engineer hauled beyond construction station 85 or construction station 143 in respect of the distance beyond station 85 or station 143, as the case may be	Per cu. yd. per 100 ft.	¾ of 1 cent.

25. Approximate estimates of the work done, made up from returns of progress measurements and computed at the prices determined or agreed upon under the provisions of this agreement are to be made by the Engineer at the end of each calendar month, and on or about the twentieth day of the next ensuing month payments equal to about ninety per cent. of the value of the work done, as shown by such approximate monthly estimate shall be made to the Contractor upon presentation of the written certificate of the Chief Engineer that the work for or on account of which the certificate is granted has been duly performed and executed to his satisfaction and stating the value of such work computed as mentioned and upon approval of such certificate by the Commission and the said certificate and such approval thereto shall be a condition precedent to the right of the Contractors to be paid said ninety per cent. or any part thereof. The remaining ten per cent. shall be retained by the Commission until the final completion of the whole work as an additional security for the performance of this agreement by the Contractors and when in the opinion of the Chief Engineer this agreement has been completely performed in accordance with the provisions thereof and until the Chief Engineer shall be satisfied that all wages of all workmen, laborers

and servants of the Contractors and of all sub-contractors under them, as well as the price of all materials and supplies made, procured or provided for the Contractors or for any of the sub-contractors have been duly paid, he shall certify the same accordingly in writing, under his hand, with a final estimate of the work done by the Contractors and with a statement of the amount due and unpaid and within two months after the granting of such certificate the amount so found due and unpaid shall be paid to the Contractors upon delivery to the Commission of a good and valid release and discharge of and from any and all claims and demands for and in respect of all matters and things growing out of or connected with this agreement or the subject matter thereof. The written certificate of the Chief Engineer certifying to the final completion of the work to his entire satisfaction and of the evidence called for by this clause having been furnished to him shall be a condition precedent to the right of the Contractors to receive or be paid the amount certified by the Chief Engineer as due and unpaid or any part thereof and the certificate of the Chief Engineer shall be conclusive as to the amount to be paid to the Contractors.

26. It is intended that every allowance to which the Contractors are fairly entitled will be embraced in the Chief Engineer's monthly certificates; but should the Contractors at any time have claims of any description which he considers are not included in the progress certificates, it will be necessary for him to make and repeat such claims in writing to the Chief Engineer within thirty days after the date of the despatch to the Contractors of each and every certificate in which he alleges such claims to have been omitted.

27. The Contractors in presenting claims of the kind referred to in the last preceding paragraph must accompany them with satisfactory evidence of their accuracy and the reason why they think they should be allowed. Unless such claims are thus made during the progress of the work within thirty days as in the preceding clause and repeated in writing every month until finally adjusted or rejected, the Contractors shall have no claim upon the Commission in respect thereof.

28. The progress measurements and progress certificates shall not in any respect be taken as binding upon the Commission or the Chief Engineer or as final measurements or as fixing final amounts: they are to be subject to the revision of the Chief Engineer in making up his final certificates and they shall not in any respect be taken as an acceptance of the work or release of the Contractors' responsibility in respect thereof, but he shall at the conclusion of the work deliver over the same in good order, according to the true intent and meaning of this agreement.

29. In order to prevent disputes or misunderstandings between the parties hereto in relation to any of the stipulations and provisions contained in this agreement, the interpretation of the true intent or meaning thereof or the manner of performance thereof or of any part thereof by either of the said parties and for the speedy settlement of such as may occur, the Chief Engineer shall be and he is hereby made constituted and appointed sole umpire to decide all such questions and matters including any arising regarding the amount and quantity, character and kind of work performed and material furnished by the Contractors

and all extra work and material. It is expressly declared and agreed that the Chief Engineer shall be entitled from time to time in reference to any or all matters whether of interpretation or otherwise arising from this contract or the said specifications or plans or relating in any manner to said work, to take legal or other professional advice and to accept and act upon such advice to such extent as to him shall seem proper, including consultation with and accepting advice or assistance from any Consulting Engineer employed by the Commission whether such Consulting Engineer shall or shall not be a member of the Commission. The decisions of the Chief Engineer which may from time to time be given on all questions in dispute shall be final or binding and conclusive upon both parties hereto and no decison or certificate given by the Chief Engineer shall be questioned or set aside by either party hereto on account of any legal defect therein or on account of any informality omission delay or error in proceeding in or about the same or upon any other grounds or for any other reason or upon any pretense, suggestion, charge or insinuation of fraud or collusion or confederacy and no objection shall be raised to any decision of the Chief Engineer in the premises or to any certificate given by him on the ground that he is in the employ of either party and is acting for or in the interest of such party or on pretence that by reason of any order or statement he may have made during the progress of the work he has disqualified himself to act between the parties hereto as above provided in all matters which may arise as aforesaid but actual fraud only shall disqualify the Chief Engineer from acting as aforesaid and the parties hereto covenant and agree each with the other to accept each and all decisions and abide by the same as final and conclusive.

30. The Contractors will protect and will not remove or destroy or permit to be removed or destroyed the stakes buoys and other marks placed on or about the said works by any engineer of the works and shall furnish the necessary assistance to correct or replace any stake or mark which through any cause may have been removed or destroyed.

31. The Commission shall have power at any time to enter upon the said works to execute any work or works not included in this agreement and the Contractors shall afford all such reasonable facilities for doing such work as the Chief Engineer shall direct or require.

32. Any notice or other communication mentioned in this agreement to be notified or given to the Contractors shall be deemed to be well and sufficiently notified or given if the same be left at the Contractors' office or mailed in any Post Office to the Contractors or foreman addressed to Cochrane Post Office, or to the Contractors' last known place of business.

33. All mechanics, laborers or other persons who perform labor in the construction of the works hereby contracted for shall be paid such wages as are generally accepted as current for competent workmen in the district in which the work is being performed, and if there is no current rate in such district then a fair and reasonable rate and in the event of a dispute arising as to what is the current or a fair and reasonable rate, it shall be determined by the Commission whose decision shall be final.

34. All the works carried on under this agreement shall be subject to the provisions of any act respecting the preservation of health on public works and to all regulations made or to be hereafter made pursuant to any such Act or by any other lawful authority, and applicable to such works, and to any regulations which may be adopted by the Commission in reference to sanitation or the preservation of health on the said work or any part thereof.

35. The Contractors shall observe and comply with all regulations made by any lawful authority and with all regulations of the Commission and instructions from the Chief Engineer from time to time made or given with reference to the prevention and extinguishing of fires, and shall pay all wages and other outlay occasioned by such regulations and instructions.

36. It is distinctly declared that no implied contract of any kind whatsoever by or on behalf of the Commission shall arise or be implied from anything contained in this contract including the said specifications, tender, plans and drawings or from any position or situation of the parties at any time, it being clearly understood and agreed that the express contracts, covenants, agreements and stipulations upon which any rights against the Commission are to be founded and it being further expressly agreed that in case of any discrepancy between these presents and anything contained in the said specifications the provisions of these presents shall govern. In case of any discrepancy appearing at any time between the specifications, profiles, plans, drawings and detailed drawings or any of them the Contractors shall follow such one of them as the Chief Engineer shall in writing direct.

IN WITNESS WHEREOF the parties hereto have herewith caused these presents to be signed and sealed on the day and year first above written.

SIGNED, SEALED AND DELIVERED by the Contractors in the presence of—

(Sgd.) W. J. JOHNSTON.

B. MACDOUGALL,
M. G. MCCLUSKEY,
G. L. MATTICE.

Tenders for construction of steel trestles at M.P. 153.5 and 196.8 received as follows:

	Delivery.	Price per 100 lbs.
Canadian Car and Foundry Co., Walkerville, Ont.....	11 months	$4 95
Dominion Bridge Company, Montreal, Que.....	Feb., 1914	4 98
Hamilton Bridge Works Company, Hamilton, Ont.....	Dec., 1913	4 87

Contract awarded Hamilton Bridge Works Co., Limited, Hamilton, Ont.

ARTICLES OF AGREEMENT made (in duplicate) this 31st day of May, in the year of our Lord one thousand nine hundred and thirteen.

BETWEEN:

HAMILTON BRIDGE WORKS COMPANY, LIMITED, (hereinafter called the Contractor)

and

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, (hereinafter called the Commission).

WITNESSETH:

1. In this Contract the word "Engineer" shall mean the Chief Engineer for the time being of the Commission and having control of the work of construction of the railway lines of the Commission, and the word "Inspector" shall mean the Inspector for the time being appointed by such Chief Engineer to represent and act for the Commission in the supervision of the construction and completion of the work herein contracted for.

2. The Contractor will supply and provide all and every kind of work, labor, materials, articles and things whatsoever (save and except timber bridge ties, guard rails, and other deck timber, which are to be supplied by the Commission) necessary for the due construction and erection, and will well and truly build, erect and complete in a perfect and workmanlike manner two trestles at or near Mileage 153.5 and Mileage 196.8 respectively of the railway line of the Commission, with all necessary appliances ready to receive the rails, in strict compliance with the latest Dominion Government specifications as to material and workmanship, except so far as such latest Dominion Government specifications are modified by the general specifications hereto annexed, and in strict compliance with the general specifications hereto annexed, and to the complete satisfaction of the Engineer as to the erection and completion thereof, it being agreed that the said works shall include the placing of ties and guard rails and the painting of the structures after erection; it being agreed that the said structures shall be completely fabricated and completely erected and the work under this contract completed on or before the 31st of December, 1913; time being deemed to be material and of the essence of this contract.

3. The Contractor shall submit all drawings and detailed plans for the approval of the Engineer of the Commission before material is ordered or work commenced.

4. The Engineer shall be the sole judge of the material and workmanship used in the said structures and in the erection thereof and of the due completion of work under this contract and his decision on all questions in dispute with regard to such material and workmanship or with regard to the execution and completion of work under this contract shall be final and the work shall be executed to his satisfaction as evidenced by his certificate in writing, which certificate shall be a condition precedent to the right of the Contractor to be paid for such work.

5. The Engineer and all persons from time to time authorized by him on his behalf shall have free entry and access to the works of the Contractor at all times while this contract is being performed and shall have all reasonable facilities afforded him and his representatives as aforesaid to satisfy them that same is being carried out and performed in accordance with this contract.

6. All portions of the structures to be manufactured under this Contract shall be weighed and loaded on cars in presence of the Engineer or Inspector, and if any material is weighed upon the cars such cars, including all blocking to be used in supporting the steel work thereon must similarly be weighed in the presence of the Engineer or Inspector before being loaded and the certificate in writing of the Engineer or Inspector certifying to the correctness of all weights of goods charged for hereunder shall be a condition precedent to the right of the Contractor to be paid for said work.

7. All materials, plant and tools required for or in connection with the said work shall be delivered by the Contractor on the tracks of the Commission at North Bay f.o.b. cars, but same and the Engineers and other workmen of the Contractor necessary for the erection of the said Structures shall be transported and conveyed by the Commission from North Bay to the said site free of charge to the Contractor, and the Commission shall further transport and convey such engineers, workmen, tools and erection plant back from the said site to North Bay free of charge to the Contractor.

8. The Commission in consideration of the premises covenants with the Contractor that the Contractor from time to time in all respects having fulfilled and performed the provisions of this Contract on the Contractor's part entitled to be fulfilled and performed will be paid for, and in respect of the said work the sum of four dollars and eighty-seven cents per hundred pounds of weight in said structure: PROVIDED HOWEVER that said weight shall not exceed by more than two per cent. the total weight as computed from the said plans, and that the Commission shall in no case be liable to pay for any weight beyond two per cent. in excess of the total weight as computed from said plans, which price shall be payable as follows: Sixty per cent. of the value of any shipment of material on delivery of same on board cars at the works of the Contractor in Hamilton, twenty per cent. additional upon delivery of same on the tracks of the Commission at North Bay f.o.b. cars and the balance on monthly progress estimates certified by the Engineer as the erection of the work proceeds, the final payment to be made within forty days after the final certificate of the Engineer.

IN WITNESS WHEREOF the said parties have caused these presents to be executed under their respective corporate seals and under the hands of their proper officers in that behalf.

THE HAMILTON BRIDGE WORKS COMPANY, LIMITED.

(Sgd.) R. M. ROY, *Manager.*

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

(Sgd.) J. L. ENGLEHART,
Chairman.

(Sgd.) A. J. McGEE,
Secy.-Treasurer.

1. Indians on Montreal River.
2. At Temagami.
3. At Englehart. The first public pump.

GENERAL SPECIFICATIONS FOR STEEL VIADUCT AT BOSTON CREEK CROSSING. MILEAGE 153.5, MAIN LINE.

Work to be Done.

The work to be governed by this specification shall include the furnishing of all labor, tools, equipment and material for the manufacture, delivery and erection of a steel viaduct at the Boston Creek Crossing, at Mileage 153.5, on the Main Line of the Temiskaming and Northern Ontario Railway.

Further, upon completion of the erection of the steel viaduct, to dismantle and remove the present 14 ft. deck timber trestle without unnecessary damage. All timber to be removed in a manner subject to the approval of the Chief Engineer.

Falsework.

The Contractor may use the existing timber trestle for erection of steelwork, as far as practicable, but it shall not be unnecessarily cut or wasted. Additional falsework shall be supplied by the Contractor subject to the approval of the Chief Engineer.

Conduct of Work.

The work shall be prosecuted with sufficient force, plant and equipment to expedite its completion to the utmost extent, and in such a manner as to be at all times subordinate to the use of the tracks by the Railway Company.

Reasonable reduction of speed will be allowed upon request of the Contractor. Tracks shall not be cut nor shall tracks be subjected to any stoppage except when specifically authorized by the Chief Engineer.

The Contractor shall protect traffic and his work by flagmen furnished by and at the expense of the Railway Company. The Contractor shall provide competent watchmen to guard the work and material against injury.

Engine Service.

If under the contract work train or engine service is furnished the Contractor free of charge, such service shall consist only in unloading materials and in transferring same from a convenient siding to the bridge site.

When derrick cars are used on main tracks, their movements shall be in charge of a train crew, and the expense of the crew and any engine service other than as noted above shall be charged to the Contractor.

Maintenance of Traffic.

Traffic shall be maintained and will be carried on in such a manner as to interfere as little as practicable with the work of the Contractor.

Changes in the supporting structure or tracks required during erection shall be at all times under the direct control and supervision of the Chief Engineer.

Design.

The viaduct is to be designed and manufactured in accordance with the 1908 general specifications for steel structures of bridges and viaducts of the Department of Railways and Canals.

The loading to be used in the design shall be Cooper's loading E-60.

Between this short specification and the general specifications the former shall take precedence.

Plans Supplied by the Contractor.

The Contractor shall supply the Chief Engineer of the Temiskaming and Northern Ontario Railway Commission with complete masonry diagrams within three weeks of the time of awarding of the contract. All shop drawings shall be submitted to the Chief Engineer for his approval, and no shop work shall be commenced until the shop drawings thereof have been approved by the Chief Engineer. After the final approval of the drawings the Contractors shall supply the Chief Engineer with three sets of blue prints.

Plans Supplied by Tenderer.

Each tender to be accompanied with a stress diagram giving size of material used in each member. Also total estimated weight of viaduct complete.

Anchor Bolts.

The Contractor shall deliver all anchor bolts to be built in the masonry before June 15th, 1913. Said anchor bolts will be set in the masonry by the Commission.

Painting.

All the steel work shall receive one shop coat and two field coats of graphite paint manufactured by the Detroit Graphite Company or the National Paint Company, Williamsport, Pa.

Inspection.

The entire work shall be subject to inspection by an Inspector appointed by the Chief Engineer.

Completion.

All steel work shall be erected and completed on or before November 1st. 1913.

Transportation.

The Commission will transport all necessary materials and men from North Bay Junction to the site of the work free of charge.

Payments.

Payments shall be by scale weight at the price per pound named in the tender, providing the scale weight does not exceed more than 2 per cent. of the total weight as computed from the detail drawings.

Office of the Chief Engineer,

North Bay, Ontario.

March 17th, 1913.

GENERAL SPECIFICATIONS FOR STEEL VIADUCT AT WILD GOOSE CROSSING, MILEAGE 196.8, MAIN LINE.

Work to be Done.

The work to be governed by this specification shall include the furnishing of all labor, tools, equipment and material for the manufacture, delivery and erection of a steel viaduct at the Wild Goose Crossing, at Mileage 196.8, on the Main Line of the Temiskaming and Northern Ontario Railway.

Further, upon completion of the erection of the steel viaduct, to dismantle and remove the present 14 ft. deck timber trestle without unnecessary damage. All timber to be removed in a manner subject to the approval of the Chief Engineer.

Falsework.

The Contractor may use the existing timber trestle for erection of steel work, as far as practicable, but it shall not be unnecessarily cut or wasted. Additional falsework shall be supplied by the Contractor subject to the approval of the Chief Engineer.

Conduct of Work.

The work shall be prosecuted with sufficient force, plant and equipment to expedite its completion to the utmost extent, and in such a manner as to be at all times subordinate to the use of the tracks by the Railway Company.

Reasonable reduction of speed will be allowed upon request of the Contractor. Tracks shall not be cut, nor shall trains be subjected to any stoppage except when specifically authorized by the Chief Engineer.

The Contractor shall protect traffic and his work by flagmen furnished by and at the expense of the Railway Company. The Contractor shall provide competent watchmen to guard the work and material against injury.

Engine Service.

If under the contract work train or engine service is furnished the Contractor free of charge, such service shall consist only in unloading materials and in transferring same from a convenient siding to the bridge site.

When derrick cars are used on main tracks, their movements shall be in charge of a train crew, and the expense of the crew and any engine service other than as noted above shall be charged to the Contractor.

Maintenance of Traffic.

Traffic shall be maintained and will be carried on in such a manner as to interfere as little as practicable with the work of the Contractor.

Changes in the supporting structure or tracks required during erection shall be at all times under the direct control and supervision of the Chief Engineer.

Design.

The viaduct is to be designed and manufactured in accordance with the 1908 general specifications for steel structures of bridges and viaducts of the Department of Railways and Canals.

The loading to be used in the design shall be Cooper's loading E-60.

Between this short specification and the general specifications the former shall take precedence.

Plans Supplied to the Contractor.

The Contractor shall supply the Chief Engineer of the Temiskaming and Northern Ontario Railway Commission with complete masonry diagrams within three weeks of the time awarding of the contract. All shop drawings shall be submitted to the Chief Engineer for his approval, and no shop work shall be commenced until the shop drawings thereof have been approved by the Chief Engineer. After the final approval of the drawings the Contractors shall supply the Chief Engineer with three sets of blueprints.

Plans Supplied by Tenderer.

Each tender to be accompanied with a stress diagram giving size of material used in each member. Also total estimated weight of viaduct complete.

Anchor Bolts.

The Contractor shall deliver all anchor bolts to be built in the masonry before June 15th, 1913. Said anchor bolts will be set in the masonry by the Commission.

Painting.

All the steel work shall receive one shop coat and two field coats of graphite paint manufactured by the Detroit Graphite Company or the National Paint Company, Williamsport, Pa.

Inspection.

The entire work shall be subject to inspection by an Inspector appointed by the Chief Engineer.

Completion.

All steel work shall be erected and completed on or before November 1st, 1913.

Transportation.

The Commission will transport all necessary materials and men from North Bay Junction to the site of the work, free of charge.

Payments.

Payments shall be by scale weight at the price per pound named in the tender, providing the scale weight does not exceed more than 2 per cent. of the total weight as computed from the detail drawings.

OFFICE OF THE CHIEF ENGINEER,

NORTH BAY, ONTARIO.

March 17th, 1913.

TENDERS FOR 100,000 TONS COAL—APRIL, 1913, TO APRIL, 1914, RECEIVED AS FOLLOWS:

Name.	Price per net ton, f.o.b. International Bridge.
W. A. Stone & Co., Buffalo, N.Y.	$2 13
Ligonier Diamond Coal and Coke Co., Wilpen, Pa.	2 20
Buffalo and Susquehanna Coal and Coke Co., Buffalo, N.Y.	2 08
Panther Run Coal Co., Pardus, Penn.	2 12½
Empire Coal Co., Ltd., Montreal, Quebec	2 25
Brady & Ewell, Buffalo, N.Y.	2 20
Widnoon Coal Mining Co., Buffalo, N.Y.	2 15
Pittsburg and Buffalo Coal Co., Pittsburg, Pa.	2 20
Standard Fuel Co., Toronto, Ontario	2 10
The Youghiogheny and Ohio Coal Co., Cleveland, Ohio	2 35

Contract awarded the Buffalo and Susquehanna Coal and Coke Company, Buffalo, N.Y., at $2.07 per net ton, f.o.b. International Bridge.

MEMORANDUM OF AGREEMENT made this 1st day of April in the year of our Lord, 1913.

BETWEEN:

BUFFALO AND SUSQUEHANNA COAL AND COKE COMPANY of Buffalo, N.Y., hereinafter called the Contractors,

and

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

1. Subject to the terms hereof the Contractors agree to sell to the Commission, and the Commission agrees to buy from the Contractors, One hundred thousand net tons run of Mine Coal of Sagamore Mine at the price of Two Dollars and Seven Cents per net ton (Two thousand pounds) on board cars, International Bridge, Black Rock, N.Y.—delivery as required up to April 1st, 1914, and subject to the provisions hereinafter stated.

2. The Contractors absolutely guarantee (*a*) that all Coal to be delivered under this contract shall be suitable for the purposes of the Railway of the Commission, and (*b*) shall on analysis in manner hereinafter provided prove to be at least equal to the following, which is agreed to be the standard analysis:—

Moisture	1.25
Hydro Carbons	32.75
Fixed Carbons	58.25
Ash	7.75
Sulphur—1.3 to 1.6.	

3. Samples for purpose of analysis may be taken (so far as deemed necessary by the Commission) from each carload of Coal on or at any time after the arrival thereof at North Bay, and may be so taken at any point on the Railway of the Commission, and such sample shall consist of not less than twenty-five pounds of lump and slack in the same relative proportion as appears in the shipment, to be taken from carload by the Superintendent, the Master Mechanic, or

the Storekeeper of the Commission, and any sample so taken shall be conclusively presumed to be a fair sample for purposes of analysis of such carload, and the Certificate of Milton L. Hersey, Analyst and Chemist, of Montreal, as to whether such sample answers the aforesaid guarantee (*b*) of the Contractors shall be absolutely final, binding and conclusive upon both parties as to whether the carload from which such sample has been taken answers such guarantee.

4. In case of analysis as aforesaid any carload of Coal delivered under this contract shall be found below standard quality as shown by analyst's Certificate as aforesaid, the Commission shall be at liberty to reject such carload or the portion of it not used, notwithstanding that delivery of same may theretofore have been taken; notwithstanding that the necessary entries for passing same through the customs may have been made, and notwithstanding that same may have been unloaded or stored or wholly or partly paid for or otherwise dealt with, and thereupon the same shall be at the risk of and shall be deemed for all purposes to be the property of the Contractors who shall forthwith remove and take delivery of same and repay to the Commission all moneys which the Commission may have paid in respect thereof, whether for freight, duties, cost of analysis, storage, unloading or any other charges or expenses, and if the Commission shall theretofore have paid the price or any part thereof, the Contractors shall forthwith repay the same. IT BEING HOWEVER EXPRESSLY AGREED THAT the aforesaid right of the Commission to reject any Coal so delivered shall be in addition to all its other legal rights and remedies in the premises, and not in substitution for same or any of them.

5. Should coal at any time delivered under this Contract whether analyzed as aforesaid or not and irrespective of the result of such analysis prove in the opinion of the Master Mechanic or Superintendent of the Commission unsuitable for the purposes of the Railway of the Commission, the Commission may at its option by notice in writing to the Contractors cancel and annul this Contract as to any Coal not theretofore shipped without prejudice to the liability of the Contractors for any breaches of this Contract.

6. Beginning with the month of April, 1913, there shall be shipped by the Contractors from the Mines, properly consigned to the Commission of North Bay Junction, and with all freight and other charges prepaid to International Bridge, Black Rock, N.Y., approximately seven cars per day, subject to the increase or diminution from time to time of the daily shipments as shall be required by written notice by letter or telegram from the Storekeeper of the Commission at North Bay to the Contractors at Buffalo, such notice to be duly sent from North Bay at least one week prior to the week to the shipments of which such notice shall apply. Coal will be sold at initial manifest weights which shall be binding, and no claim shall be allowed for short weights except in the case of unusual loss by reason of defective cars. Provided and required that twenty-five per cent. of daily shipments of said coal be delivered in flat-bottomed cars.

7. The Commission shall further have the right at any time to cancel its purchase hereunder to the extent of not more than ten per cent. of the quantity of Coal covered by this Contract, in which case such ten per cent. or less proportion as the case may be shall be taken from the last deliveries herein agreed upon.

8. If, during the continuance of this Contract, the Commission is unable to make use of the said Coal by reason of strike, destruction or disability of its Railway or any part thereof, the Commission shall have the right during the continuance of such disability at its option to discontinue taking Coal in the quantities herein specified.

It is also understood that should Contractors encounter strikes, accidents, shut-downs at the Mines from reasons beyond their control, they shall not be expected to deliver on this Contract during the period of suspension.

9. At the time of each shipment the Contractor shall send to the Storekeeper of the Commission at North Bay five correct copies of Invoice of the Coal covered by such consignment charged at the price of Two Dollars and Seven Cents per ton as aforesaid, two of which copies shall be duly certified as required by the Canadian Customs Law.

10. Payments shall be made by the Commission to the Contractor in Toronto funds, for all Coal delivered to the Commission at North Bay in any one month, on or before the 20th day of the following month.

11. This Contract shall inure to the benefit of and be binding upon the successors and assigns of the parties respectively.

AS WITNESS the corporate seals of the said parties under the hands of the proper Officers in that behalf.

WITNESS:

BUFFALO & SUSQUEHANNA COAL & COKE CO.,

(Sgd.) J. W. TROUNCE,
General Sales Agent.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.,

(Sgd.) J. L. ENGLEHART,
Chairman.

(Sgd.) A. J. McGEE,
Secretary-Treasurer.

THIS AGREEMENT made the third day of December, A.D. 1911.

BETWEEN:

THE CANADIAN PACIFIC RAILWAY COMPANY hereinafter called the "Pacific Company,"

and

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called "The Commission."

WHEREAS the Commission desires to have the benefit and enjoyment of the passenger station facilities of the Pacific Company at the said Town of North Bay, in the Province of Ontario, which the Pacific Company has consented to grant upon and subject to the terms and conditions hereinafter set out:

THEREFORE THIS INDENTURE WITNESSETH that the parties hereto do hereby for themselves, their successors and assigns mutually covenant and agree as follows:

1. The Pacific Company will re-arrange its tracks and platforms and construct new tracks on its property at the said Town of North Bay as shown by red and yellow lines upon the plan hereto annexed marked "A," which is signed by the parties hereto and made part of this agreement, and the cost of all the work done under the provisions of this paragraph shall be paid to the Pacific Company by the Commission upon receipt of a properly certified account thereof.

2. The Pacific Company shall upon and subject to the terms and conditions hereinafter contained and to the observance and performance thereof by the Commission permit the Commission to construct at its own expense a connection between the tracks of the Commission and those of the Pacific Company on the westerly limit of Regina Street at the point marked "X" on the said plan, and to operate the passenger trains of the Commission over the tracks of the Pacific Company which serve the passenger station of the latter at North Bay aforesaid and are hereinafter referred to as the "joint tracks," and to have the benefit and enjoyment of the said passenger station, together with the passenger facilities in connection therewith, all jointly and equally with the Pacific Company and any other Company or Companies to which the Pacific Company may give similar privileges; the said joint tracks, the said passenger station and passenger facilities of the Pacific Company and the lands occupied thereby, being hereinafter for the purposes of this agreement referred to collectively as "the Joint Premises."

3. The Commission shall operate its own trains over the joint tracks with its own engines and train crews, it being understood that such tracks are to be used by the Commission solely for the purpose of operating its passenger trains with the privilege of stopping only at the station for the receiving and delivering of its passenger, baggage and express traffic, but without the privilege of otherwise stopping upon the joint tracks.

4. The Pacific Company is exclusively, except in respect of duties usually performed by trainmen, including train baggagemen to perform all services in connection with the handling of all passenger and baggage traffic at the said station for both Companies, such handling to include the selling of tickets, and the checking and handling of baggage. The express business of the Commission is to be handled by the Commission's own employees.

5. The maintenance, repair and operation of the Joint Premises shall, except as otherwise herein provided, be done by the Pacific Company and all work incidental thereto shall be done under the sole direction and supervision of the proper officers of the Pacific Company.

6. The Pacific Company shall at the expense of the Commission maintain the track connection at the said point indicated by the letter "X," together with all protective and other appliances at the said junction, and shall likewise at the expense of the Commission from time to time construct and provide and maintain such other appliances for the protection and maintenance of or in connection with the said junction as the Pacific Company may be required or ordered by the Board of Railway Commissioners for Canada to provide.

7. The trains of the several classes of the Pacific Company shall have precedence on the Joint Premises over the trains of the Commission of the same or inferior classes, and the trains of the Commission of superior classes shall have precedence over the trains of the Pacific Company of inferior classes.

8. The Pacific Company shall not pay or be liable for any mileage or other compensation for or in respect of any engine or car brought upon the Joint Premises by the Commission and not intended for delivery to the Pacific Company, but the Commission shall as between the parties hereto pay and be liable for and hereby covenants to indemnify the Pacific Company against any claim or claims for any such mileage or other compensation for or in respect of any such engines or cars; PROVIDED, however, that in the case of cars to be delivered by the Commission to the Pacific Company the Pacific Company shall assume such mileage or other compensation from the time that the same are delivered to the Pacific Company on the Joint Premises.

9. The enginemen, trainmen and other employees of the Commission when on or in charge of its trains and engines on the Joint Premises shall be subject to and be governed by the rules, regulations and orders of the Pacific Company in force for the time being and the movement and handling of the said trains and engines on the Joint Premises shall be subject to the said rules, regulations and orders and to any direction of the Pacific Company or of its officials which it or they may deem necessary or expedient for the reasonable and proper use and operation of the Joint Premises. The Commission shall on demand, for reasonable cause, stated by the Pacific Company, remove from employment in or about the Joint Premises any such engineman, trainman, or other employee of the Commission.

10. The schedule for the arrival at or departure from North Bay of the trains of the Commission over the Joint Premises shall be fixed from time to time by agreement between the Superintendents of the parties hereto having charge of

the operation of the railway in which the Joint Premises are situated. Reasonable notice of any desired change thereof shall be given by such Superintendent of the Commission to such Superintendent of the Pacific Company, who shall thereupon make and furnish to the Commission as far as it is practicable, the proper schedule of time card for the movement of all trains of both parties on the Joint Premises, which schedule shall give precedence on the Joint Premises to the trains of the several classes of the Pacific Company over the trains of the Commission of the same or inferior classes and to the trains of the Commission over the trains of the Pacific Company of inferior classes. When the trains of the Commission are run behind time their movements shall be directed or controlled in the same manner as trains of a similar class of the Pacific Company when out of schedule time.

11. The employees of the Pacific Company while engaged in doing any act or transacting any business in respect of the trains or traffic of or otherwise in any manner on account of the Commission shall for the time being be considered as employees of the Commission.

12. Each of the parties hereto shall as between the parties hereto be responsible for all loss, damage or injury which may occur to person or property on its trains, for all such loss, damage or injury which may be done by its trains (including damage by fire originating from its trains) whether or not the condition or arrangement of the Joint Premises or the Pacific Company's lands contributes in any manner or to any extent to such loss, damage or injury, and for all damage to its trains while on the Joint Premises, except in the case of collision between one of its trains and a train of the other party due to the fault of the enginemen or trainmen of one of them, in which case the party whose enginemen or trainmen are at fault shall be responsible for and make good to the other all loss, damage and injury caused by the collision, but this clause shall not give to any third party any claim to which he or she would not otherwise be legally entitled.

13. When any loss, damage or injury of whatsoever nature other than such as is referred to in the next preceding paragraph hereof is occasioned to any person who may be as a passenger or otherwise lawfully upon the Joint Premises by reason either directly or indirectly of the fact that the Joint Premises or any part thereof are or is being used by either of the parties hereto for the purpose of handling its traffic, all responsibility for such loss, damage or injury shall as between the parties hereto be assumed and borne by such respective party, but this clause shall not give to any third party any claim to which he or she would not otherwise be legally entitled.

14. In case of collision if the proper officers of the parties hereto are unable to agree as to the employees of which were at fault, or as to the cause of any collision or as to the amount of damage done, the questions arising in respect thereof shall be referred to arbitration in the manner hereinafter provided for the settlement of differences and disputes, and the party hereto which shall be found responsible shall indemnify, save harmless and defend the other from and against all claims, costs and proceedings resulting from or growing out of such fault, and the party so adjudged liable to pay the other any damages in respect thereof shall abide by and forthwith perform and comply with the award of the arbitrators which shall in all cases be final and conclusive upon both parties.

15. In case of damage or injury to persons or property caused by a train of either party and in case of damage by fire caused by a train while upon the Joint Premises, the claims arising therefrom, shall with the approval of the Commission be adjusted by the proper officer of the Pacific Company, and in satisfaction thereof the party at fault shall pay the full amount of the liability, but in the final settlement therefor such settlement shall include and embrace a full and entire release of both parties hereto.

16. The parties hereto respectively shall indemnify, save harmless and defend each other from all loss, damage or injury which either party agrees hereunder to assume, and from all claims, costs and proceedings resulting from and arising out of or payable by reason of any such loss, damage or injury and in case proceedings be commenced against either party hereto for any loss, damage or injury which the other agrees hereunder to assume or bear, the party proceeded against may give notice thereof to the other and thereupon such other party shall at once assume the defence of such proceedings and save the party proceeded against harmless from all loss and costs. In case proceedings are commenced against both parties for loss, damage or injury which is to be assumed or borne by one of them, such one shall assume the defence of such proceeding and save the other party hereto harmless from all loss and costs.

17. The Commission shall, at its own expense, provide and supply the passenger tickets, baggage checks and other forms and stationery required for its own business, and shall at its own expense do its own advertising, including the advertising in North Bay of its train service. It is understood that the Commission is to be permitted to advertise its train service in the Joint Passenger Station in the same manner as similar advertising of the Pacific Company.

18. The Commission agrees to pay during the continuance of this Agreement to the Pacific Company for the privilege hereby granted in addition to any other payments herein provided for the amounts hereinafter mentioned in the manner and at the times hereinafter mentioned, that is to say:—

(*a*) For the benefit and enjoyment of the passenger station facilities and the service of the ticket office and baggage staff, five hundred dollars ($500) per month.

(*b*) For trackage for passenger trains one dollar per train moving over the joint tracks or any portion thereof, there being, however, no trackage charge for empty trains entering the Joint Passenger station to take on passengers, or leaving the Joint Passenger station after discharging passengers.

(*c*) For switching and delivering passenger train equipment to and from connecting railways other than the Pacific Company, three dollars ($3.00) per car.

(*d*) For supplies furnished, if any, cost plus fifteen per cent.

(*e*) The amounts expended for wages of signalmen and supplies at the junction hereinbefore referred to.

19. The Pacific Company shall render to the Commission as soon as possible after the end of each month properly certified accounts showing moneys which have become due or owing to or earned by the Pacific Company under the provisions of this agreement during such preceding month, and the Commission shall pay to the Pacific Company within thirty days after the receipt of each said bill, the amount owing to the Pacific Company as indicated thereby.

20. At any time within three months after the rendering of any account under the provisions hereof, the Pacific Company will allow proper inspection by the officers and agents of the Commission of all accounts, payrolls, returns and vouchers for the purpose of checking or certifying any accounts so rendered. The Commission shall have the right within the time so limited to employ an auditor to investigate the accuracy of any such account or accounts and the Pacific Company shall afford facilities for such investigation. Neither the acceptance of any such account or accounts nor the payment thereof by the Commission shall prejudice its right to an audit or verification within the time limited and if upon such audit or verification it shall be found that the Commission has paid or allowed the Pacific Company any sum or sums of money which under the provisions of this agreement it is not liable to pay or which should not have been allowed, the Commission shall be entitled to demand and collect such sums, *PROVIDED*, however, that the Pacific Company shall not be bound to accept the rulings of any such auditor employed by the Commission, and that in case the parties cannot agree as to any such questions of account, the same shall be determined under the provisions for arbitration hereinafter contained.

21. Should the Commission fail to make any of the monthly payments herein stipulated to be made as and when they become due and payable and such failure shall continue for thirty days after demand in writing for payment shall have been made by the Pacific Company, the Pacific Company may after the expiration of said thirty days forthwith cancel this agreement and exclude the Commission from the use of the Joint Premises or any part thereof as it may be advisable.

22. The Commission will not assign, transfer, set over or sublet to any person or corporation any of the rights or privileges granted to it hereunder, nor shall it have any right to handle the traffic of any other Company upon or over the Joint Premises, and upon any breach of this covenant the Pacific Company may forthwith cancel this agreement and exclude the Commission from the use of the Joint Premises or any part thereof as it may be advisable.

23. It is understood and agreed that neither this agreement nor anything herein contained shall in any way limit the right of the Pacific Company to grant to any other Railway Company or Companies upon such terms as the Pacific Company may deem proper privileges in respect of the Joint Premises or any part thereof similar to those hereby given to the Commission.

24. Any difference which may arise under this agreement either as to its construction or respecting the carrying out of the same according to the true intent and meaning thereof, shall if it cannot be amicably adjusted by the parties hereto, be submitted to arbitration in the following manner:—

The party desiring such reference shall appoint an arbitrator who shall be a disinterested person skilled in railroad matters and give notice thereof and of intention to refer to the other party who shall within thirty days after receipt of such notice appoint on its behalf an arbitrator who shall be a disinterested person skilled in railroad matters, in default of which such an arbitrator on behalf of such other party may be appointed by one of the Judges of the Supreme Court of Judicature for Ontario on the application of the party desiring such reference after ten days notice to the other party. The two arbitrators so appointed or selected shall select a third and the award of the said three arbitrators or a

majority of them made after due notice to both parties of the time and place of hearing the matter referred and hearing the party or parties who may attend shall be final and binding on both parties to this agreement, and the parties hereto expressly agree to abide thereby. In case the two arbitrators first appointed fail to appoint a third within ten days after they have both been appointed, then the third arbitrator may be appointed by one of the Judges of the Supreme Court of Judicature for Ontario on application of either party after ten days' notice to the other. In case of death or the refusal or inability to act of any arbitrator, or if for any cause the office of any arbitrator become vacant, his successor shall be appointed in the same manner as is provided for his appointment in the first instance unless the parties otherwise agree.

25. This agreement shall, subject to the sooner determination thereof as herein provided, continue in force for a period of one year from the date hereof, and thereafter from year to year subject, however, to the right of either party hereto to determine the same at the end of the first or any subsequent year by giving not less than sixty days previous notice in writing to the other party, which notice may be either delivered or mailed postage prepaid and registered addressed to the Superintendent of such other party at North Bay aforesaid.

26. The agreement between the parties dated the sixth day of April, 1903, is hereby cancelled and annulled to all intents and purposes, as, and from the date hereof.

IN WITNESS WHEREOF the parties hereto have hereunto caused their corporate seals to be affixed under the hands of their duly authorized officials.

THE CANADIAN PACIFIC RAILWAY COMPANY,

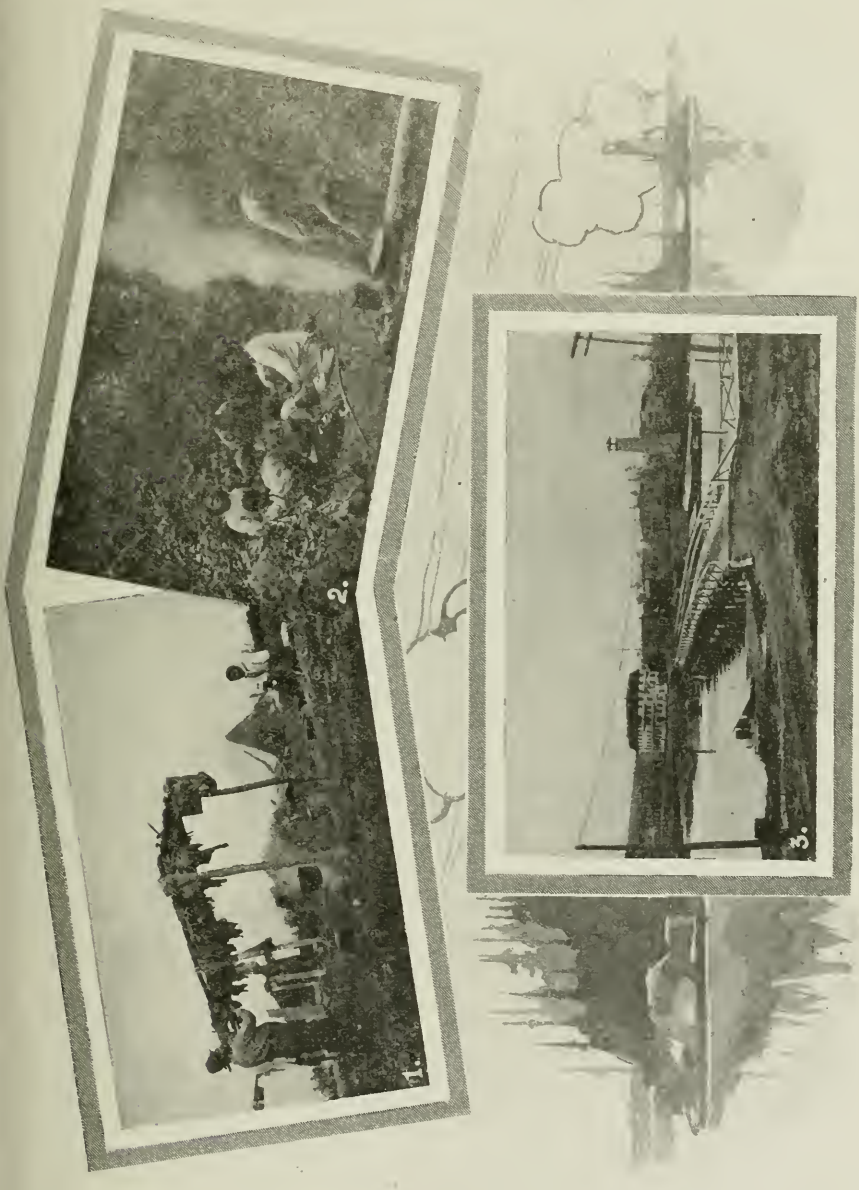
D. McNICOLL, *Vice President.*

H. C. OSWALD, *Assistant Secretary.*

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

J. L. ENGLEHART, *Chairman.*

A. J. McGEE, *Secretary-Treasurer.*



1. Drying moose meat.
2. On the way to take treaty. Indians at dinner.
3. Bridge across Montreal River, Elk Lake.

NIPISSING CENTRAL RAILWAY

ANNUAL REPORT OF CHIEF ENGINEER AND SUPERINTENDENT OF MAINTENANCE.

Year Ending October 31st, 1913.

A. J. McGee, Esq.,

Secretary-Treasurer,

Toronto, Ontario.

Dear Sir:—

I beg to submit the following report on Construction, Maintenance of Way and Maintenance of Equipment, for the year ending October 31st, 1913.

CONSTRUCTION.

New Liskeard Extension:

The extension from Browning Street, Haileybury, to the Armstrong Street bridge over the Wabis River at New Liskeard, was completed and placed in operation. Within the corporate limits of the towns of Haileybury and New Liskeard, the tracks are laid on the streets of the respective towns, but between them the tracks, leased from the Temiskaming and Northern Ontario Railway, are used.

Haileybury Market Spur:

A spur line for freight traffic has been built to serve the Government Wharf, Municipal Market and industries, along the lake front at Haileybury.

Cobalt Terminals:

A connection has been made with the Temiskaming and Northern Ontario Railway Commission at North Cobalt, and an independent track has been leased between North Cobalt and Cobalt, permitting the Nipissing Central Railway Company's cars to enter Cobalt over the right-of-way of the Commission, and to use the Commission's passenger station as a terminal. This arrangement is a great convenience to the patrons of the railway. The old tracks of the Company between North Cobalt and Cobalt, have been removed.

North Cobalt Car Barn and Sub-station:

A large modern car barn and sub-station is under construction at North Cobalt. The building is of brick and steel construction and is 175 feet by 64 feet. It provides accommodation for all the Company's rolling stock with facilities for the proper inspection and repair of the equipment. Office accommodation for the local officials of the Company is also provided. In the new sub-station will be installed the 150 K.W. and 300 K.W. motor generator sets now in the old sub-station and a new 300 K.W. set necessary to carry the increasing load. The transmission line from the Northern Canada Power Company's sub-station at Cobalt to the new sub-station at North Cobalt has been completely rebuilt and other changes have been made that will effect a very considerable reduction in the transmission losses. It is expected that the new building will be ready for service about January 15th, 1914.

New Rolling Stock:

Two new double-end vestibule interurban type of cars have been received from the Preston Car and Coach Company. These cars are 47 ft. 6 in. long over all and are arranged with a smoking compartment and have seating capacity for fifty people.

A combination car has been received from the Russell Car and Snow-Plow Company. This car serves as baggage and express car, snow-plow and switching locomotive, handling carload freight to and from the transfer sidings on the Temiskaming and Northern Ontario Railway.

North Temiskaming Extension:

Instrumental surveys have been made for an extension of the railway from New Liskeard to North Temiskaming.

MAINTENANCE OF WAY.

The permanent way has been fully maintained and is in considerably better condition than at the beginning of the year. The track on Ferguson Avenue, Haileybury, has been re-aligned, surfaced and ballasted with the crushed trap-rock. The track on the New Liskeard extension and Market Spur was thoroughly ballasted during construction.

The total operated mileage is as follows:—

Main Track:		
Owned and maintained by the Company	4.59 miles.	
Leased from the T. & N.O. Rly. Comm'n.		
Maintained by Company	1.39 miles	
Maintained by Commission	4.52 miles	
Total Main Track		10.50 miles
Sidings and Spurs:		
Owned and maintained by the Company..	1.26 miles	
Leased from the T. & N.O. Rly. Comm'n.	0.66 miles	
Total Sidings		1.92 miles
Total Track		12.42 miles

MAINTENANCE OF EQUIPMENT.

All equipment has been maintained in serviceable condition. The present facilities for the care of and repairs to equipment are very meagre, but with the completion of the new car barn and sub-station, the equipment can be maintained much more efficiently.

The following rolling stock is in service:—

6 double-end passenger cars
(Interurban type).
1 combination baggage car and snow-plow.
1 flat car.

Respectfully submitted.

S. B. CLEMENT,
C.E. & S. of M.

North Bay, Ont., Dec. 13th, 1913.

GENERAL BALANCE SHEET

ASSETS.

Property Owned:		
Valuation of Road and Equipment to Oct. 31st, 1912	$186,123 74	
Cost of Road and Equipment to Oct. 31st, 1913	106,830 44	
		$292,954 18
Townsite Property, North Cobalt		248,010 00
Working Assets:		
Cash	$3,520 60	
Accounts Collectable	2,539 87	
Bills Receivable	187 43	
Balance due on Townsite Sales	27,501 32	
Balance due from Agents and Conductors.	823 27	
Material and Supplies	13,220 51	
		47,793 00
Deferred Debit Items:		
Accounts in Suspense	$8,335 66	
Insurance Paid in Advance	862 63	
		9,198 29
Other Assets:		
Franchise		123,758 88
		$721,714 35

LIABILITIES.

Debit:		
Capital Stock	$530,000 00	
Working Liabilities:		
Accounts Payable	$26,154 14	
Unclaimed Wages	54 65	
T. & N. O. Ry. Advance	98,323 21	
		124,532 00
Free Surplus:		
Profit and Loss—Balance		67,182 35
		$721,714 35

PROFIT AND LOSS.

Townsite Balance	$588 19	By Balance, October 31st, 1912 $31,358 12
Balance Carried Forward	67,182 35	By Net Revenue:
		Operation 36,412 42
	$67,770 54	$67,770 54

Nipissing Central Railway.

Comparative Statement of Earnings, Expenditure and Result of Operation

For the Fiscal Years, Nov. 1, 1911, to Oct. 31, 1912, and Nov. 1, 1912, to Oct. 31, 1913.

REVENUE.	Per Cent.	November 1, 1911 to October 31, 1912.	Per Cent.	November 1, 1912 to October 31, 1913.
		$ c		$ c
I. Revenue from Transportation:				
Passenger Revenue		52,747 59		83,618 72
Baggage Revenue		44 35		129 28
Parlor, Chair and Special Car Revenue		282 50		498 95
Milk Revenue				199 94
Switching Revenue		96 00		427 61
Totals		53,170 44		84,874 50
II. Revenue from operations other than transportation:				
Station and car privileges		44 09		598 68
Power		7 50		
Miscellaneous		639 66		36 08
Totals		691 25		634 76
Total Revenue		53,861 69		85,509 26
EXPENDITURES.				
I. Maintenance of Way and Structures	9.1	4,911 82	9.2	7,886 29
II. Maintenance of Equipment	3.8	2,041 07	4.8	4,107 43
III. Traffic Expenses	.9	504 96	.8	720 75
IV. Transportation Expenses	43.8	23,583 80	38.6	33,007 51
V. General and Miscellaneous	5.2	2,785 63	3.9	3,308 14
Total Operating Expenses	62.8	33,827 28	57.3	49,030 12
Balance		20,034 41		36,479 14
DEDUCTIONS FROM INCOME.				
Taxes				66 72
Net result		20,034 41		36,412 42

Total Amount Expended on Construction and Equipment during Year November 1st, 1912, to October 31st, 1913.

Engineering and superintendence	$3,784 42
Right of way	858 50
Other land used in electric railway operation	480 30
Grading	14,759 21
Ballast	4,597 13
Ties	124 56
Rails, rail fastenings and joints	6,710 98
Special work	2,312 36
Paving	1,599 76
Track laying and surfacing	3,587 43
Bridges, trestles and culverts ..... Cr.	499 44
Crossings, fences, cattle guards and signs	378 59
Telegraph and telephone lines	60 68
Poles and fixtures	4,189 02
Underground conduits	139 00
Transmission system ..... Cr.	4,012 47
Distribution system	5,378 10
Substation buildings	1,680 93
General office buildings	948 43
Shops and car houses	19,714 84
Power plant equipment	5,481 00
Substation equipment	6,082 30
Shop equipment	200 00
Cars	21,952 96
Electric equipment of cars	5,088 00
Law expenses	1,233 85
	$106,830 44

NIPISSING CENTRAL RAILWAY COMPANY.

Statement of Wages Paid Employees Year Ended October 31st, 1913:—

McDonald, K.	Superintendent	$1,800 00	
Crouch, R. J.	Accountant	1,200 00	
Stewart, W. F.	Land Agent	900 00	
Stewart, O.	Caretaker	76 00	
Montgomery, A.	Conductor	895 92	
Holden, E.	"	976 78	
Murray, D. R.	"	953 67	
Normandy, B.	"	933 31	
Leslie, F.	"	418 25	
Anderson, G.	"	988 32	
Quinn, P.	Motorman	1,051 85	
McAuley, A. D.	"	1,040 02	
Fleming, J.	"	60 50	
Finlay, F.	"	1,052 94	
Carmichael, W.	"	984 47	
Morrell, J. A.	"	883 07	
Forrest, D.	"	929 00	
Miller, N.	Stenographer	472 90	
McDonald, A. A.	Conductor	772 50	
Lyons, H. C.	Motorman	775 50	
Parks, W.	"	724 25	
Huntington, N.	Barn Foreman	540 00	
Davies, J. R.	Barn Operator	919 50	
Warner, J.	"	917 50	
Graham, W.	Barnman	134 75	
Andrews, F.	"	124 20	
Gagnon, L.	Car Repairer	419 50	
Cristefaro, A.	Barnman	711 25	
O'Brien, H.	"	7 00	
Young, W.	Car Repairer	572 10	
Goodman, E.	Janitor	3 00	
Carmichael, E. C.	Conductor	384 25	
Curry, F. W.	"	225 50	
Moodie, F.	Barn Foreman	7 80	
DeMille, C.	Car Repairer	70 27	
Henson, W.	Conductor	140 50	
Montgomery, P.	Car Repairer	27 50	
			$23,093 87
Section No. 16½	Foremen	$932 90	
	Laborers	2,824 80	
			3,757 70
Construction Gangs	Foremen	$3,039 40	
	Laborers	17,639 40	
			20,678 80
Total Pay Rolls for Year			$47,530 37

NIPISSING CENTRAL

Statement of Earnings and Expenses by Months,

No.	RECEIPTS	Per cent.	November 1912	Per cent.	December 1912
			$ c.		$ c.
I.	Revenue from Transportation—				
	Passenger Revenue	.....	6,533 30	.....	6,486 90
	Baggage Revenue	.....	6 95	.....	14 40
	Parlor, Chair and Special Car Revenue	.....	40 00	.....	20 00
	Milk Revenue	.....	.....	.....	17 45
	Switching Revenue	.....	70 00	.....	10 00
	Totals	.....	6,650 25	.....	6,548 75
II.	Revenue from Operations other than Transportation—				
	Station and Car Privileges	.....	416 16	.....	27 20
	Miscellaneous	.....	19 65	.....	9 70
	Totals	.....	435 81	.....	36 90
	Total Revenue	.....	7,086 06	.....	6,585 65
	EXPENDITURES				
I.	Maintenance of Way and Structures.	3.4	242 32	5.7	377 64
II.	Maintenance of Equipment	6.	425 87	2.5	166 50
III.	Traffic Expenses	.5	36 60	.4	30 00
IV.	Transportation Expenses	35.9	2,546 60	43.2	2,842 82
V.	General and Miscellaneous	2.2	155 51	.2	11 96
	Total Operating Expenses	48.	3,406 90	52.	3,428 92
	Balance	.....	3,679 16	.....	3,156 73
	Other Income—				
	.....	.....	.....	.....	.....
	Deductions from Income—				
	.....	.....	.....	.....	.....
	Taxes	.....	3,679 16	.....	3,156 73

RAILWAY

November, 1912, to October, 1913.

Per cent.	January 1913	Per cent.	February 1913	Per cent.	March 1913	Per cent.	April 1913
	$ c.		$ c.		$ c.		$ c.
.....	5,508 05	.....	5,043 55	.....	6,005 50	.....	6,542 25
.....	8 75	.....	5 25	.....	4 65	.....	6 20
.....	40 00	.....	43 45	.....	35 50	.....	70 00
.....	.....	.....	.....	.....	.....	.....	.....
.....	3 00	.....	.....	.....	30 00	.....	3 75
.....	5,559 80	.....	5,092 25	.....	6,075 65	.....	6,622 20
.....	8 40	.....	11 15	.....	25 84	.....	10 20
.....	.....	.....	.....	.....	.....	.....	.....
.....	8 40	.....	11 15	.....	25 84	.....	10 20
.....	5,568 20	.....	5,103 40	.....	6,101 49	.....	6,632 40
11.5	639 51	10.6	542 10	12.	734 93	8.5	561 76
3.1	173 25	2.7	138 01	4.2	257 56	4.1	271 06
1.	58 00	1.2	60 30	.8	46 45	.8	52 40
58.1	3,234 04	52.3	2,670 41	42.7	2,606 62	37.3	2,476 75
6.9	381 43	5.8	296 46	4.6	277 63	4.	268 02
80.6	4,486 23	72.6	3,707 28	64.3	3,923 19	54.7	3,629 99
.....	1,081 97	.....	1,396 12	.....	2,178 30	.....	3,002 41
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	1,081 97	.....	1,396 12	.....	2,178 30	.....	3,002 41

NIPISSING CENTRAL

Statement of Earnings and Expenditures—

No. RECEIPTS.	Per cent.	May 1913	Per cent.	June 1913
		$ c.		$ c.
I. Revenue from Transportation—				
Passenger Revenue	.....	7,211 34	.....	7,617 22
Baggage Revenue	.....	7 25	.....	10 28
Parlor, Chair and Special Car Revenue	.....	20 00	.....	45 00
Milk Revenue	.....	.....	.....	2 95
Switching Revenue	.....	6 00	.....	24 16
Totals		7,244 59	.....	7,699 59
II. Revenue from Operations other than Transportation —				
Station and Car Privileges	.....	22 04	.....	4 76
Miscellaneous	.....	.....	.....	.....
Totals	.....	22 04	.....	4 76
Total Revenue	.....	7,266 63	.....	7,704 35
EXPENDITURES.				
I. Maintenance of Way and Structures	6.5	472 29	15.6	1,193 81
II. Maintenance of Equipment	7.5	542 42	7.7	596 29
III. Traffic Expenses	.7	51.05	.9	71 85
IV. Transportation Expenses	42.6	3,095 82	34.6	2,668 15
V. General and Miscellaneous	3.8	278 63	3.8	293 87
Total Operating Expenses	61.1	4,440 21	62.6	4,823 97
Balance	.....	2,826 42	.....	2,880 38
Other Income—				
.....	.....	.....	.....	.....
Deductions from Income—				
Taxes	.....	.....	.....	.....
Net Result	.....	2,826 42	.....	2,880 38

RAILWAY—Continued.

November 1912, to October 1913.

Per cent.	July 1913	Per cent.	August 1913	Per cent.	September 1913	Per cent.	October 1913	Per cent.	Total, Nov. 1, 1912 to Oct. 31, 1913
	$ c.		$ c.		$ c.		$ c.		$ c.
.....	8,373 20	.....	8,113 05	.....	8,397 24	.....	7,787 12	.....	83,618 72
.....	15 15	.....	18 55	.....	15 10	.....	16 75	.....	129 28
.....	60 00	.....	55 00	.....	35 00	.....	35 00	.....	498 95
.....	40 72	.....	54 33	.....	50 49	.....	34 02	.....	199 94
.....	16 32	.....	57 80	.....	92 25	.....	114 33	.....	427 61
.....	8,505 39	.....	8,298 73	.....	8,590 08	.....	7,987 22	.....	84,874 50
.....	1.70	.....	13 26	.....	16 32	.....	41 65	.....	598 68
.....	.....	.....	6 73	.....	.....	.....	.....	.....	36 08
.....	1.70	.....	19 99	.....	16 32	.....	41 65	.....	634 76
.....	8,507 09	.....	8,318 72	.....	8,606 40	.....	8,028 87	.....	85,509 26
8.4	716 77	6.7	553 11	8.7	752 22	13.7	1,099 83	9.2	7,886 29
3.4	285 72	5.1	427 64	4.	341 71	6.	481 40	4.8	4,107 43
.6	54 30	.7	58 00	1.7	143 80	.7	58 00	.8	720 75
30.6	2,605 91	30.5	2,539 69	30.8	2,654 62	38.	3,066 08	38 6	33,007 51
3.4	284 28	4.	334 86	3.8	328 82	4.9	396 67	3.9	3,308 14
46.4	3,946 98	47.	3,913 30	49.	4,221 17	63.3	5,101 98	57.3	49,030 12
.....	4,560 11	.....	4,405 42	.....	4,385 23	.....	2,926 89	.....	36,479 14
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	15 75	.....	.....	.....	50 97	.....	66 72
.....	4,560 11	.....	4,389 67	.....	4,385 23	.....	2,875 92	.....	36,412 42

NIPISSING CENTRAL

Statement of Expenditures, November

Maintenance of Way and Structures.	November, 1912	December, 1912	January, 1913	February, 1913	March, 1913
	$ c.	$ c.	$ c.	$ c.	$ c.
Superintendence of way and structures	30 00	30 00	30 00	30 00	30 00
Rail fastenings and joints	.....	.....	.....	.....	.....
Special work	.....	.....	.....	.....	.....
Roadway and track labor	191 52	227 04	147 00	112 67	37 95
Miscellaneous roadway and track expenses	60	1 40	24 10	5 00	.....
Cleaning and sanding track	.....	.....	.....	.....	.....
Removal of snow, ice and sand	.....	112 70	315 50	394 43	474 48
Bridges, trestles and culverts	.....	.....	.....	.....	.....
Crossings, fences, cattle guards & signs	14 60	6 50	5 10	.....	.....
Other miscellaneous way expenses	.....	.....	.....	.....	.....
Poles and fixtures	.....	.....	.....	.....	.....
Transmission system	.....	.....	.....	.....	.....
Distribution system	.....	.....	.....	.....	192 50
Miscellaneous electric line expenses	.....	.....	.....	.....	.....
Buildings and structures	5 60	.....	117 81	.....	.....
Totals	242 32	377 64	639 51	542 10	734 92
Maintenance of Equipment.					
Superintendence of equipment	30 00	30 00	30 00	30 00	30 00
Power plant equipment	11 50	.....	.....	.....	.....
Substation equipment	.....	.....	.....	.....	.....
Passenger and combination cars	119 08	114 85	92 77	85 26	152 91
Freight, express and mail cars	.....	.....	.....	.....	.....
Service cars	34	.....	.....	.....	.....
Electric equipment of cars	40	20 89	25 81	21 12	74 28
Shop machinery and tools	.....	.....	.....	.....	.....
Shop expenses	264 55	76	20 57	1 63	37
Other miscellaneous eqipment expenses	.....	.....	4.10	.....	.....
Totals	425 87	166 50	173 25	138 01	257 56
Traffic Expenses.					
Superintendence and solicitation	30 00	30 00	30 00	30 00	30 00
Advertising	.....	.....	28 00	24 30	11 20
Miscellaneous traffic expenses	6 60	.....	.....	6 00	5 25
Totals	36 60	30 00	58 00	60 30	46 45
Transportation Expenses.					
Superintendence of Transportation	30 00	30 00	76 67	30 00	30 00
Group I—Power					
Substation employees	150 00	155 00	155 00	140 00	157 50
Substation supplies and expenses	.....	.....	.....	.....	.....
Power purchased	1,075 01	1,142 81	1,188 41	1,153 65	1,019 75
Group II—Operation of cars.					
Passenger conductors, motormen and trainmen	1,018 74	1,057 61	1,173 98	1,065 97	1,139 35
Freight and express conductors and motormen	.....	.....	.....	.....	.....
Miscellaneous car-service employees	1 00	12 40	12 00	10 80	10 26
Miscellaneous car service expenses	47 45	25 30	409 59	5 60	18 11
Station employees	.....	.....	.....	.....	.....
Station expenses	.75	160 00	3 59	35 64	1 65
Carhouse employees	223 65	252 30	212 00	228 75	230 00
Other transportation expenses	.....	7 40	2 80	.....	.....
Totals	2,546 60	2,842 82	3,234 04	2,670 41	2,606 62

RAILWAY.

1st, 1912, to October 31st, 1913.

April. 1913	May. 1913	June, 1913	July, 1913	August, 1913	September, 1913	October, 1913	Total.
30 00	30 00	30 00	30 00	30 00	41 40	30 00	371 40
.....	.....	6 82	.....	.....	20 46	.....	27 28
.....	.....	4 59	3 22	95	.....	.....	8 76
259 95	278 03	830 21	308 96	323 21	604 40	725 88	4,046 82
1 52	.....	7 22	12 87	.....	7 53	1 90	62 14
2 09	3 99	.....	3 23	3 80	3 99	6 65	23 75
14 59	.....	73 34	1 42	.....	.....	.....	1,386 46
.....	.....	9.75	.....	.....	.....	85 82	95 57
29 99	.....	6 63	.....	.....	5 30	153 71	221 83
.....	.....	.....	.....	2 00	.....	.....	2 00
.....	.....	37 75	80 00	55 50	.....	43 10	216 35
.....	.....	5 90	3 25	.....	17 84	3 50	30 49
223 62	160 27	150 19	221 69	137 36	51 30	49 27	1,186 20
.....	.....	19 00	.....	29	.....	.....	19 29
.....	.....	12 41	52 13	.....	.....	.....	187 95
561 76	472 29	1,193 81	716 77	553 11	752 22	1,099 83	7,886 29
30 00	30 00	34 90	30 00	30 00	30 00	30 00	364 90
.....	.....	.....	.....	115 50	10 00	42 69	179 69
.....	.....	.....	69 20	97 33	31 24	91 49	289 26
211 54	466 39	395 59	157 10	148 02	153 85	206 71	2,304 07
.....	.....	.....	.....	.....	32 00	82 80	114 80
.....	.....	16 00	.....	.....	.....	.....	16 34
29 34	56 50	143 96	28 06	34 83	84 33	26 49	546 01
.....	Cr. 21 35	.....	.....	.....	.....	.....	Cr. 21 35
18	10 88	5 84	1 36	1 96	29	1 22	309 61
.....	.....	.....	.....	.....	.....	.....	4 10
271 06	542 42	596 29	285 72	427 64	341 71	481 40	4,107 43
30 00	30 00	30 00	30 00	30 00	30 00	30 00	360 00
22 40	16 80	33 60	24 30	28 00	113 80	28 00	330 40
.....	4 25	8 25	.....	.....	.....	.....	30 35
52 40	51 05	71 85	54 30	58 00	143 80	58 00	720 75
30 00	30 00	43 47	30 00	30 00	30 00	30 00	420 14
150 00	158 25	151 25	157 00	156 00	151 25	155 00	1,836 25
.....	.....	2 49	.....	.....	.....	.....	2 49
931 12	981 28	962 92	927 75	945 45	1,016 10	1,177 50	12,521 75
1,125 53	1,186 04	1,155 68	1,231 62	1.160 45	1,156 85	1,184 62	13,656 44
.....	.....	.....	.....	.....	9.80	47 80	57 60
10 26	11 78	.....	16 34	11 78	11 40	11 40	119 42
44 69	554 09	140 90	117 35	74 40	36 50	85 79	1,559 77
.....	.....	18 59	.....	.....	45 00	180 00	243 59
16 65	7 80	26 10	Cr. 55 15	.....	8 47	24 47	230 05
168 50	166 50	166 75	181 00	161 61	189 25	169 50	2,349 81
.....	.....	.....	.....	.....	.....	.....	10 20
2,476 75	3,095 82	2,668 15	2,605 91	2,539 69	2,654 62	3,066 08	33,007 51

NIPISSING CENTRAL

Statement of Expenditures—November 1st, 1912,

General Expenses.	November, 1912	December, 1912	January, 1913	February, 1913	March, 1913
	$ c.	$ c.	$ c.	$ c.	$ c.
Salaries and expenses of general officers	30 00	30 00	30 00	30 00	30 00
Salaries and expenses of general office clerks	100 00	102 90	145 00	145 00	145 00
General office supplies and expenses	14 50	27 45	15 87	34 00	8 00
Law expenses	.....	Cr. 210 00	Cr. 508 55	.....	.....
Miscellaneous general expenses	2 35	1 60	1 50	2 45	23 25
Undistributed Accounts.					
Injuries and damages	.....	.....	600 00	.....	9 00
Insurance	.....	51 51	60 51	51 51	51 51
Stationery and printing	8 66	8 56	37 10	33 60	10 87
Store expenses	.....	.....	.....	.....	.....
Totals	155 51	11 96	381 43	296 46	277 63

MISCELLANEOUS

November 1st, 1912

—	November, 1912	December, 1912	January, 1913	February, 1913	March, 1913
Passenger car, hours	1,720.	1,775.	1,792.	1,617.	1,783.
Passenger car, miles	17,205.	17,750.	17,925.	16,175.	17,830.
Total passengers carried	87,793.	87,595.	77,597.	71,051.	80,841.
Average daily receipts	$221.67	$212.41	$179.56	$181.97	$196.77¾
Average receipts per car hour	3.86	3.71	3.10	3.14¾	3.41¾
Average receipts per car mile	.38¾	.37	.31	.31½	.34

RAILWAY—Continued

to October 31st, 1913—Continued.

April, 1913	May, 1913	June, 1913	July, 1913	August, 1913	September, 1913	October, 1913	Total.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
30 00	30 00	30 00	30 00	30 00	30 00	30 00	360 00
145 00	145 00	145 00	150 00	150 00	150 00	150 00	1,672 90
8 00	4 00	9 64	4 00	4 00	4 00	8 00	141 46
.....	.....	1 00	.....	.....	.....	.....	Cr. 717 55
70	3 30	1 30	2 45	4 95	13 00	2 20	59 05
.....	.....	.....	.....	.....	.....	50 00	659 00
84 32	84 33	84 33	84 33	123 01	106 38	106 33	888 07
.....	12 00	22 60	13 50	22 90	25 44	42 87	237 94
.....	.....	.....	.....	.....	.....	7 27	7 27
268 02	278 63	293 87	284 28	334 86	328 82	396 67	3,308 14

STATISTICS

to October 31st, 1913.

April, 1913	May, 1913	June, 1913	July, 1913	August, 1913	September, 1913	October, 1913	Total.
1,728.	1,821.	1,837.	1,835.	1,870.	1,788.	1,929.	21,495.
17,283.	18,215.	18,375.	18,350.	18,705.	17,880.	19,295.	214,988.
91,608.	100,969.	104,734.	112,432.	113,028.	113,835.	114,755.	1,156,238.
$221.65	$233.88	$255.79	$273.53	$265.27	$283.44	$255.31	$232.53
3.84¾	3.98	4.17¾	4.62	4.39½	4.75¾	4.10	3.95
.38½	.39¾	.41½	.46	.43¾	.47½	.41	.39½

1. Indian crew, Hudson's Bay Co. longboat, packing supplies across portage, Montreal River.
2. Going to their winter hunting grounds. Indian women on the portage.
3. Lining Hudson's Bay longboat up the rapids, foot of Indian Chutes.

NIPISSING CENTRAL RAILWAY.

Distribution of accounts paid, Fiscal year, November 1, 1912, to October 31, 1913.

Maintenance of Way and Structures	$14 56
Maintenance of equipment	37 20
Traffic expenses	131 15
Transportation expenses	13,155 98
General expenses	910 03
Shop stock	34,605 94
Oil and waste stock	154 06
New Liskeard extension	3,667 59
Pay rolls	47,530 37
Townsites	2,842 82
Station and car privileges	102 12
Insurance	1,741 70
Unclaimed wages	12 00
Accounts collectible	10 85
New passenger cars	763 50
Construction	19,111 82
North Temiskaming extension	74 50
Taxes	66 72
	$124,932 91

ALEXANDER AND CABLE LITHOGRAPHING CO., LTD., TORONTO, ONT.

344—Printing in type and embossing passes	$8 50	
521—Lithographing letter heads	13 50	
		$22 00

ALGOMA STEEL CORPORATION, LTD., SAULT STE. MARIE.

332—Sellers anchor bottom tie plates	$308 75	
		$308 75

ALLIS, CHALMERS, BULLOCK, LTD., MONTREAL.

366—Transformers (Contract 499)	$1,000 00	
		$1,000 00

THE ART METROPOLE, TORONTO, ONT.

525—Band chain	$6 80	
		$6 80

HUGH ALLEN, ENGINEERING DEPT., NORTH BAY.

582—Travelling expenses, August and September, 1913	$45 00	
616—Travelling expenses, October, 1913	20 00	
		$65 00

BELL & ROCHESTER HARDWARE CO., LTD., HAILEYBURY, ONT.

465—Charcoal	$0 90	
		$0 90

MUNICIPAL CORPORATION OF BUCKE.

528—Taxes, 1912	$1,264 15	
574—Taxes, 1913	1,264 14	
		$2,528 29

BEAMISH AND SMITH, NORTH BAY, ONT.

383—Overcoats, reefers and suits	$324 00	
497—Uniforms	416 00	
		$740 00

BANK OF OTTAWA, COBALT, ONT.

410—Lot 469, North Cobalt, Ont.	$400 00	
		$400 00

BARBER ELLIS, LIMITED, TORONTO, ONT.

409—Envelopes	$4 78	
368—Envelopes	18 75	
457—Envelopes	8 62	
		$32 15

BURROWES AND PARMELEE, NORTH BAY, ONT.

527—Sixteen and 32 C.P., 110V inc. lamps	$27 00	
584—Sixteen C.P., 110V inc lamps	16 20	
		43 20

S. J. BARLOW & CO., NEW LISKEARD, ONT.

642—New pavement, cor. Whitewood and Armstrong streets., New Liskeard, and removing 25 sq. feet concrete sidewalk	$5 00	
		$5 00

COBALT DAILY NUGGET, LIMITED, COBALT, ONT.

388—Quarter sheet cards	$4 00	
390—Time tables	7 50	
490—Advertisement *re* Cobalt sub-station	10 80	
551—Time tables	7 50	
		$29 80

CHAS. COURTMARCHE, (POSTMASTER) NORTH COBALT, ONT.

514—Rental of post office drawer, August 1st, 1913, to August 1st, 1914	$3 00	
322—Rental of post office drawer, August 1st, 1912, to August 1st, 1913	3 00	
		$6 00

COLEMAN FARE BOX CO., TOTTENHAM, ONT.

339—Fare boxes	$36 00	
529—Fare boxes	57 00	
		$93 00

CANADIAN GENERAL ELECTRIC CO., LTD., TORONTO, ONT.

341—Trolley bushings	$12 00
334—Wire, machine bolts	47 03
358—Electrical material	4 88
389—Acme Tape	9 50
445—Field coils, insulation and wedges	33 00
404—Carbon brushes, K28 main cylinder, complete	57 50
460—Four-light Wheeler street fixtures, complete	25 55
533—Lightning arresters	13 14
553—No. 10 B. and S., R.C. Cable	3 45
559—Equipment for combination car	5,088 00
518—Loom, imperial compound	6 69

CANADIAN GENERAL ELECTRIC CO.—*Continued.*

546—Motor generator set, contract No. 10860	$5,481 00	
560—Paste	1 00	
601—Carbon brushes	17 10	
620—Field coils	37 00	
		$10,836 84

CANADIAN WESTINGHOUSE CO., LTD., HAMILTON, ONT.

352—Rail bonds	$527 40	
387—Carbon brushes	18 00	
370—Electrical material	619 65	
426—10" type P. pressure head	1 66	
522—Air brake equipment	416 00	
548—Repairs to type C.C.L. stator, 435 h.p., 2300V, 100 amps. 700 R.P.M., 60 cys.	115 50	
622—Carbon brushes	18 00	
		$1,716 21

R. J. CROUCH, CASHIER, NORTH COBALT, ONT.

357—Commission on advertising, month of November, 1912	$73 44	
360— " " " December, 1912	4 80	
280— " " " January, 1913	1 26	
402— " " " February, 1913	2 19	
467— " " " March, 1913	4 56	
414— " " " April, 1913	1 80	
499— " " " May, 1913	36	
458— " " " June, 1913	84	
549— " " " July, 1913	30	
554— " " " August, 1913	2 34	
627— " " " September, 1913	2 88	
618— " " " October, 1913	7 35	
		$102 12

COCHRANE HARDWARE, LTD., NORTH BAY, ONT.

469—Extension ladders	$11 50	
501—Paint	47 75	
462—Screen doors and screens	3 50	
590—Soot door	85	
		$63 60

CODE AND BURRITT, OTTAWA, ONT.

489—Fee for services *re* extension of time for completion of Nipissing Railway extension	$300 00	
381—Fee required for depositing the bill and for printing and translating *re* Nipissing Central Railway Co. Charter.	211 90	
		$511 90

CANADIAN FAIRBANKS CO., LTD., TORONTO, ONT.

567—Triplex block	$200 00	
		$200 00

CANADA WIRE AND CABLE CO., LTD., TORONTO, ONT.

385—Trolley wire and guy wire	$2,134 57	
		$2,134 57

CANADIAN STEEL FOUNDRIES, LTD., MONTREAL, QUE.

411—Single track curve, intersection "Y"	$1,530 00	
588—Turnouts	600 00	
		$2,130 00

MISS AUGUSTA CARROLL, TORONTO, ONT.

375—In full settlement of all claims and demands for alleged injury . . .	$500 00	$500 00

DR. J. A. CREASOR, NORTH COBALT, ONT.

437—Professional services, *re* alleged fatal injury, Thos. Young, North Cobalt, November 29th, 1912	$7 00	$7 00

HOTEL CECIL, NORTH BAY, ONT.

443—Board, month of March, 1913	$12 00	$12 00

COBALT FOUNDRY, COBALT, ONT.

491—Trolley wheels	$21 00	
562—Reboring motor bearing	15 25	
		$36 25

CANADA IRON CORPORATION, LTD., MONTREAL, QUE.

448—Flanged truck tires	$263 41	$263 41

CANADA CEMENT CO., LTD., MONTREAL, QUE.

516—Cement . . .	$773 75	
592—Cement . . .	294 02	
		$1,067 77

CANADA PAINT CO., LTD., MONTREAL, QUE.

520—Cherry oil wood stain	$2 00	$2 00

CANADIAN ALLIS CHALMERS, LTD., MONTREAL.

544—Spare parts for auto-transformers, bill No. 987	$580 00	
558—Transformers (contract No. 1499)	4,478 00	
		$5,058 00

S. J. CHERRY, NORTH BAY, ONT.

603—Progress estimate, No. 1, heating equipment for North Cobalt car barn	$1,967 62	$1,967 62

CROUSE-HINDS CO., OF CANADA, LTD., TORONTO, ONT.

586—Carbons, globes, etc.	$26 98	$26 98

CANADIAN PACIFIC RAILWAY COMPANY'S TELEGRAPH, NORTH BAY, ONT.

634—Message, October 21st, 1913, to Dawson & Co., Montreal	$0 25	$0 25

DAWSON & CO., LTD., MONTREAL, QUE.

391—Trolley wheels and bushings, headlights, globes, trolley harps, etc. . .	$160 62	
372—Carbons and spindles	20 00	
382—Tape linen . . .	4 50	
471—Trolley bushings . .	12 00	
416—Trolley wheels . .	28 75	

DAWSON & CO.—*Continued.*

503—Bushings, spindles, retrivers	$97 00	
531—Trolley bushings	12 00	
524—Trolley spindles, Trolley wheels	32 60	
569—Bushings and trolley harps	37 30	
594—Trolley spindles, lockwashers, twine wire, etc	31 79	
596—Trolley bushings	12 00	
624—Snap switches, conduits, socket snaps	124 15	
		572 71

DAY AND GORDON, HAILEYBURY, ONT.

479—Advice, *re* collection of rent from Dr. Creasor	$2 00	
		$2 00

DESPATCH AND TRIBUNE, NORTH BAY, ONT.

333—Scholars certificates	$3 00	
572—Advertisement, tenders for car barn	6 30	
		$9 30

J. M. DEACON, NORTH BAY, ONT.

359—Searches, W. Watson	$1 40	
506—Searches in Harris	1 50	
550—Search, Farah McCamus, et al.	1 80	
		$4 70

DEPARTMENT OF PUBLIC PRINTING AND STATIONERY, OTTAWA, ONT.

335—Notice *re* Standard Passenger Tariff, C.R.C., No. 8	$6 60	
		$6 60

J. W. DEEGAN, NORTH BAY, ONT.

343—Club bag	$6 50	
		$6 50

DOMINION NUT & BOLT FASTENER CO., LTD., MONTREAL, QUE.

413—Fasteners	$2 04	
		$2 04

C. L. FERGUSON, PAYMASTER, NORTH BAY, ONT.

353—Pay rolls, November, 1912	$4,255 55	
342—Pay rolls, December, 1912	3,666 50	
393—Unclaimed wages, F. Campite, June, 1912	12 00	
407—Pay rolls, January, 1913	3,427 32	
378— " February, 1913	2,930 92	
463— " March, 1913	2,698 04	
412— " April, 1913	2,708 58	
495— " May, 1913	3,003 44	
456— " June, 1913	5,211 31	
523— " July, 1913	5,312 84	
512— " August, 1913	5,313 43	
599— " September, 1913	4,327 00	
580— " October, 1913	4,675 44	
		$47,542 37

MISS JEAN FERGUSON, NEW LISKEARD, ONT.

320—Land purchased, ⅛ of a acre, Town of New Liskeard, and land damages	$150 00	
		$150 00

A. A. Fraser, Engineering Dept., North Bay, Ont.

607—Travelling expenses, August and September, 1913	$17 50	
		$17 50

Farrance and Jenkinson, Toronto, Ont.

431—Badges for special constables	$4 95	
		$4 95

Federal Engineering Co., Ltd., Toronto, Ont.

447—Sixteen C.P., 110 volt, Federal carbon lamps	$15 00	
		$15 00

Employers' Liability Assurance Corporation, Ltd., Toronto, Ont.

373—Renewal premiums on bond, No. 25579, W. F. Stewart, and bond No. 25576, R. J. Crouch	$9 00	
		$9 00

Electric Railway Journal, New York, N.Y.

605—Subscription to Electric Railway Journal, August, 1914 and postage	$4 50	
		$4 50

George Gordon & Co., Ltd., Cache Bay, Ont.

345—12194 ft. white pine	$286 52	
		$286 52

Ludger Gagnon, Haileybury, Ont.

595—For alleged damage to property, said to be caused by reason of the change in grade of the roadway in front of said property, described as northerly, fifty feet of parcel 1127, fyled in the office of the Lands Titles, at North Bay, Ont.	$250 00	
		$250 00

E. M. Goodman, New Liskeard, Ont.

570—In full settlement of alleged injuries to team of horses and damages to waggon, alleged to have been struck by N. C. R. car, No. 6, at Lang St. crossing, August 23rd, 1913, and owned by Mr. Beswitherick	$50 00	
		$50 00

General Supply Co., of Canada, Ltd., Ottawa, Ont.

626—Unions, bushings, etc.	$9 17	
		$9 17

Robt. W. Hunt & Co., Ltd., Montreal, Que.

347—Inspection of cable and wire	$34 40	
587—Inspection of culvert pipe	7 30	
576—Inspection of culvert pipe	2 50	
		$44 20

Corporation, Town of Haileybury, Ont.

498—Taxes on Lots 66, 67, 68, plan 77, year 1913	$15 75	
		$15 75

HAMILTON STAMP & STENCIL WORKS, LTD., HAMILTON, ONT.

354—Motormen's and conductors badges	$3 60	
449—Motormen's and conductors badges	3 12	
		$6 72

HAMILTON BRIDGE WORKS CO., HAMILTON, ONT.

609—Progress estimate No. 1, structural steel work delivered at North Cobalt, car barns	$2,481 60	
644—Progress estimate No. 2, final structural steel work delivered at North Cobalt car barns	$620 40	
		$3,102 00

HOTEL CANADA CO., LTD., NEW LISKEARD, ONT.

464—Hotel account, W. R. Keys and party, month of June, 1913	$71 20	
		$71 20

THE HAILEYBURIAN, HAILEYBURY, ONT.

519—Advertising, *re* new car barns	$2 50	
		$2 50

IMPERIAL OIL CO., LTD., TORONTO, ONT.

349—Gargoyle artic ammonia oil	$15 12	
336—Grease and engine oil	44 00	
395—Engine oil	12 80	
459—Engine oil	24 71	
505—Gear grease and engine oil	25 29	
571—Engine oil and gargoyle artic ammonia oil	30 67	
600—Engine oil	13 77	
		$166 36

JACKSON PRESS, KINGSTON ONT.

397—Bills payable, form No. 2500, form 2903	$6 80	
415—Forms 2904, 2903, and 2603	21 40	
384—Bills payable, form 2500, memo. form 2902	10 75	
451—Letterheads	2 25	
507—Remittance books	12 00	
466—Motorman's daily reports	1 50	
526—Daily time cards, order slips, time books, etc.	21 65	
528—Time checks	1 25	
598—Time slips	7 50	
628—Account collectible forms	4 25	
		$89 35

S. T. JOY, NEW LISKEARD, ONT.

408—Full settlement, Lot 8, Con. 6, Bucke, 2 acres and for alleged damages to his garden	$275 00	
		$275 00

JOHN E. KILLORAN, HAILEYBURY, ONT.

361—Repairs to plate of track spike drawer	$0 75	
		$0 75

JAMES KNOX, NEW LISKEARD, ONT.

379—Grinding drills and tempering	$2 65	
		$2 65

G. C. Kuhlman Car Co., Cleveland, Ohio.

428—Canvas lined seat rattan	$56 70	$56 70

Kerry & Chace, Ltd., Toronto, Ont.

652—Services rendered, from August 1st, 1911, to April 30th, 1913, balance of amount due	$726 27	$726 27

Robert Lillie, North Cobalt, Ont.

418—Hardware supplies	$12 64	
468—Axes, handles, oil, etc	2 85	
		$15 49

John Lovell & Son, Ltd., Montreal, Que.

461—One copy of "Railway Law"	$10 00	$10 00

John Millen & Son, Ltd., Montreal, Que.

473—Shelby Seamless Steel Trolley Poles Standard "B"	$18 00	
530—Le Carbone brushes, 2¼" x 1⅞" x ½"	2 30	
602—Trolley poles	15 00	
		$35 30

Mail Printing Co., Toronto, Ont.

346—Advertising, Dec. 7, 14, 21 and 28, 1912, Jan. 4th, 1913	$19 50	$19 50

The Muir Cap Co., Toronto, Ont.

470—Police cap	$3 00	$3 00

Map Specialty Co., Toronto, Ont.

399—Blue prints	$11 60	$11 60

James Murray, New Liskeard, Ont.

406—Right of way, south half lot 9, con. 6, Bucke	$75 00	$75 00

J. W. Mahon, Cobalt, Ont.

392—Rental of waiting room, Cobalt, months of November, December, 1912, and January, 1913	$30 00	$30 00

McLellan Co., New Liskeard, Ont.

472—Lumber, stone boat and labor	$52 59	$52 59

McAusland & Anderson, North Bay, Ont.

646—Services and expenses *re* North Cobalt sub-division	$87 50	$87 50

Northern Ontario Light & Power Co., Ltd,, Cobalt, Ont.

369—Electric current supplied at North Cobalt, month of November, 1912	$1,075 76	
348—Electric current supplied at North Cobalt, month of December, 1912	1,142 81	

NORTHERN ONTARIO LIGHT & POWER CO.—*Continued.*

423—Electric current supplied New Liskeard waiting room, Jan., 1913	$3 25	
433—Electric current supplied January, 1913	1,188 41	
394— " " February, 1913	1 153 65	
396— " " New Liskeard waiting room, Feb., 1913	2 35	
475—Electric current supplied New Liskeard waiting room, March, 1913	1 65	
483—Electric current supplied, March, 1913	1,019 75	
430— " " April, 1913	943 50	
432— " " New Liskeard waiting room, April, 1913	1 25	
509—Electric current supplied New Liskeard waiting room, May, 1913	95	
511—Electric current supplied at North Cobalt, May, 1913	$981 28	
476— " " New Liskeard waiting room, June 30th, 1913	55	
492—Electric current supplied at North Cobalt, June, 1913	962 92	
557— " " July, 1913	927 75	
552— " " August, 1913	945 45	
635— " " September, 1913	1 016 10	
636— " " October, 1913	1,177 50	
		$12,544 88

NORTHERN ELECTRIC & MANUFACTURING CO., LTD., TORONTO, ONT.

573—Locknuts, bushings, elbows	$27 08	
589—Conduit, elbows, couplings	139 00	
604—No. 10, S.B.R.C. steel wire	5 93	
630—Lightning arresters	40 00	
		$212 01

S. W. NEADOW, NEW LISKEARD, ONT.

362—Sharpening picks	$4 55	
		$4 55

OHIO BRASS CO., MANSFIELD, OHIO.

417—One inner and outer screw for med. rail, bond compressor, cat. 5438	$22 00	
		$22 00

OFFICE SPECIALTY MFG. CO., LTD., TORONTO, ONT.

374—Cabinet	$26 00	
		$26 00

NORTHERN CANADA SUPPLY CO., LTD., COBALT, ONT.

532—Cement	$152 25	
487—Twist drills	2 25	
		$154 50

NORTHERN LUMBER MILLS, LTD., NORTH COBALT, ONT.

474—Birch	$1 50	
611— "	3 00	
		$4 50

NIPISSING MINING CO., LTD., COBALT, ONT.

504—For rental of right of way as per agreement, June 19th, 1911, for years 1912 and 1913	$2 00	
		$2 00

NIPISSING CENTRAL RAILWAY OPERATION ACCOUNT.

585—Applying B.P., A.D., 226 of the North Cobalt Athletic Park Association, $85.80 commission on receipts, on their note of May 15, for $200.00, reduced on Sept. 2nd to $116.50; see B.C. No. 52	$85 80	$85 80

PRESTON CAR & COACH CO., LTD., PRESTON, ONT.

420—Castings	$35 60	
434—Equipments of Peter Smith heaters on motor cars, Nos. 14 and 16	551 50	
436—Fare registers, motor cars, Nos. 14 and 16	200 00	
		$787 10

PILKINGTON BROS., LTD., TORONTO, ONT.

338—Plates of glass	$13 50	
534—Plates of glass	6 75	
		$20 25

J. PIVERLEY, NORTH COBALT, ONT.

450—For Lot 471, North Cobalt, new site car barns	$75 00	$75 00

THE PEDLAR PEOPLE, LTD., OSHAWA, ONT.

535—Culverts, couplings	$581 70	
536—Culverts	406 05	
		$987 75

CHAS. PLATT, NEW LISKEARD, ONT.

613—Light of glass, Grand Union Hotel	$3 00	$3 00

THE PROVIDENCE HOSPITAL, HAILEYBURY, ONT.

439—Hospital attendance *re* alleged injury, Thos. Young, Nov. 28th, 1912	$2 00	$2 00

N. L. PIPER, RAILWAY SUPPLY CO., LIMITED, TORONTO, ONT.

606—Discs, 3½ red and green	$3 75	$3 75

A. C. RORABECK, NORTH BAY, ONT.

401—Vaseline	$0 50	
537—Fly dope	1 15	
		$1 65

RICE LEWIS & SON, LTD., TORONTO, ONT.

615—Paste, fire pot	$8 97	$8 97

R. S. ROBINSON, NEW LISKEARD, ONT.

318—Rental of waiting room, corner Paget St. and Whitewood Avenue, New Liskeard, one year	$160 00	$160 00

H. L. Rodgers, Master Mechanic's Dept., North Bay, Ont.

425—Expenses, January, 1913	$12 00	
		$12 00

Russell Car & Snow Plow Co., Ridgeway, Pa.

478—Russell combination car, detachable steel, new plans, 1 pair Russell B 6, trucks	$2,650 00	
		$2,650 00

Jos. Raycroft, Haileybury, Ont.

539—Progress certificate No. 1, work done to July 25th, 1913	$742 50	
500—Final certificate (No. 2), grading of Foster spur, Haileybury, Ontario	608 75	
		$1,351 25

Stephenson & Son, New Liskeard, Ont.

541—Advertising "Tenders for car barn, Cobalt"	$3 10	
		$3 10

Smith, Kerry & Chace. Toronto. Ont.

355—Services rendered in connection with extension of N.C. Ry. to New Liskeard, Ont.	$913 19	
		$913 19

W. F. Stewart, Land Agent, North Cobalt. Ont.

351—Commission on land sales, October and November, 1912	$90 00	
371— " " June and November, 1912	13 75	
442— " " March, 1912, April, 1913	10 50	
515— " " April, 1913	10 00	
482— " " June, 1913	16 25	
556— " " April, May and June, 1913	20 00	
629— " " September, 1913	5 00	
650— " " October, 1913	72 50	
		$238 00

Steel Company of Canada, Ltd., Hamilton, Ont.

403—O. H. Brass screws	$24 50	
419—Bolts and washers	10 40	
575—Steel	63 74	
610—Machine bolts	16 12	
		$114 76

John Sharp, New Liskeard, Ont.

455—Right of way, part of lots 8 and 9, concession 6, Township of Bucke, land damages	$300 00	
		$300 00

Southam Press. Ltd.. Toronto. Ont.

398—Switching tariff, M.C. No. 1	$6 00	
477—Tariff E 9, 1 pp.	5 25	
513—Tariff E 10	4 25	
484—Passenger tariffs, E 11	8 25	
617—Teachers' certificates	5 50	
631—Tariff E 12	9 00	
		$38 25

SOUTHAM, LIMITED, MONTREAL, QUE.

331—Form E 2, 8, ride commutation tickets and employees 56-trip book, form E 6	$32 50	
316—Tickets, forms E 2, E 3 and E 4	47 50	
324—Tickets, form E 8, E 1 and E 7	94 00	
421—Form 3, 7, 6-trip tickets, scholars' certificates	62 50	
493—Tickets, forms E 7, E 2 and E 4	77 50	
564—Commutation tickets	50 00	
619—Tickets, forms E 3 and E 8	20 00	
		$384 00

SAMSON CORDAGE WORKS, BOSTON, MASS.

591—Signal cord	$5 84	
		$5 84

WILLIAM SCULLY, MONTREAL, QUE.

422—Buttons, caps	$41 00	
441—Conductor's cap, motorman's cap	4 50	
486—Caps, altered	3 75	
577—Silver and gilt lace	4 40	
608—Conductors' silver and gilt buttons	11 50	
		$65 15

STEPHENSON BOILER & ENGINE WORKS, PETROLEA, ONT.

438—Fire extinguishers	$48 00	
		$48 00

SYMON & MCEWEN, NEW LISKEARD, ONT.

480—Rental of house, Whitewood Ave., New Liskeard, May 20th to June 20, 1913	$10 00	
543—Rental of house, Whitewood Ave., New Liskeard, June 20th to July 20th, 1913	10 00	
621—Rental of house, Whitewood Ave., New Liskeard, July 20th to August 20th, 1913	10 00	
632—Rental of house, Whitewood Ave., New Liskeard, Aug. 20th to Sept. 20th, 1913	10 00	
648—Rental of house, Whitewood Ave., New Liskeard, Sept. 20th to Nov. 20th, 1913	20 00	
		$60 00

SUTCLIFFE & NEELANDS, NEW LISKEARD, ONT.

508—Progress estimate No. 1, on new car barns, North Cobalt	$1,689 37	
540—Progress estimate No. 2, on new car barns, North Cobalt	2,000 29	
625—Progress estimate No. 3, on new car barns, North Cobalt	1,755 25	
612—Progress estimate No. 4, on new car barns, North Cobalt	6,396 90	
		$11,841 81

STAR BRICK CO., NORTH BAY, ONT.

538—Brick	$957 00	
579— "	1,243 00	
593— "	748 00	
		$2,948 00

SMART-TURNER MACHINE CO., LTD., HAMILTON, ONT.

623—Estimate No. 1, 7½ ton hand power travelling crane	$362 08	
		$362 08

TEMISKAMING & NORTHERN ONTARIO RAILWAY.

337—Amount paid J. M. McNamara, title drawing, transfer, etc., *re* R. E. Wilson, Part 8, 6 Bucke	$8 30	
		$8 30

TEMISKAMING TELEPHONE, CO., LTD., NEW LISKEARD, ONT.

363—Telephone service, November, 1912	$2 35	
364—Telephone service, December, 1912	1 60	
427—Telephone service, January, 1913	1 50	
435—Rental of telephone, North Cobalt, March 1st, to August 31st, 1913	12 50	
400—Telephone service, February, 1913	2 75	
481—Changing pole line, New Liskeard extension	82 00	
485—Telephone service, March, 1913	1 05	
446—Telephone service, April, 1913	70	
517—Telephone service, May, 1913	3 55	
494—Telephone service, June, 1913	1 60	
563—Telephone service, July, 1913	2 60	
565—Rental of phone, North Cobalt, September 1st, 1913, to March 1st, 1914	12 50	
566—Telephone service, August, 1913	2 10	
581—Work on spur line, north of Haileybury and Bay Sts., New Liskeard, and changing Lang St. crossing	95 46	
637—Telephone service, September, 1913	50	
638—Telephone service, October, 1913	2 20	
		$224 96

JOS. E. THOMPSON, TORONTO, ONT.

314—Premiums on policies, Nos. 36197, 5663, 263661	$463 60	
441—Insurance on electric cars, policy No. 1838237, No. 4118972, additional premium, Employers' Liability policy, No. 109406, additional premium, Ocean and Accident Guarantee Co., No. 109929	361 01	
496—Renewal premiums, policies Nos. 263661, 5663, 36197	463 60	
597—Renewal premiums, 50346, 50344, 291764, 300910, 300992, 15873, 36197, 5663	453 49	
		$1,741 70

THE THOMAS CO., NORTH BAY, ONT.

356—Clock	$7 50	
452—Clock	7 40	
555—Clock	8 50	
		$23 40

THISTLE RUBBER TYPE CO., SOMBRA, ONT.

405—One line rubber stamp	$0 15	
		$0 15

THORPE BROS. HAILEYBURY, ONT.

444—Frames, table, chairs	$23 20	
		$23 20

J. J. TURNER & SONS, PETERBOROUGH, ONT.

545—Tents	$33 48	
		33 48

(HOTEL VENDOME), VENDOME CO., LTD., HAILEYBURY, ONT.

502—Board, A. A. Fraser and C. J. Wright	$11 50	
510—Hotel account, H. J. McAuslan, E. Cahill, W. R. Carr	24 00	
		$35 50

WARWICK BROS. & RUTTER, LTD., TORONTO, ONT.

547—Agreement forms	$14 00	
578—Voucher forms and copies	17 50	
		$31 50

WABI IRON WORKS, LIMITED, NEW LISKEARD, ONT.

326—Work on drill and screw clamp, brake shoes	$28 70	
330—Brake shoes	10 45	
340—Brake shoes	33 60	
350—Repairs to adjustment screws	5 55	
386—Brake shoes	137 01	
453—Brake shoes	42 80	
424—Changing pattern	2 00	
454—Brake shoes	147 03	
488—Brake shoes	22 10	
568—Brake shoes	5 38	
583—Brake shoes	45 50	
		$480 12

WHITMAN, BARNES MANUFACTURING CO., ST. CATHARINES, ONT.

542—Drills	$25 51	
		$25 51

WOOD VALLANCE & CO., HAMILTON, ONT.

614—No. 2 bolt cutter	$4 25	
		$4 25

YOUNG AND MCEVOY.

377—In full settlement of all costs, etc., *re* Carroll vs. Nipissing Central Railway	$100 00	
		$100 00
Grand Total		$124,932 91

INDEX

	PAGE
Officials of T.& N. O. Railway	6
General Remarks	7
Auditor's Report	12
Insurance	13
Counsel's Report	13
Comparative Statement of Wages	16
Report of Chief Engineer	21
Elk Lake Branch	21
Extension to Gowganda	21
Iroquois Falls Branch	23
James Bay Surveys	23
Additions and Betterments	23
Maintenance of Equipment	24
Maintenance of Way	24
Accidents	25
Motive Power and Car Department	28
New Rolling Stock	28
New Equipment	29
Repairs to Locomotives	31
Locomotive Mileage	34
Repairs to Passenger Equipment	34
Repairs to Freight and Works Equipment	36
Report of Road Department:—	
Maintenance of Track	41
Old Rails Removed	42
Cross Ties Used	43
Sidings, Laid and Extended	44
New Under Culverts	46
New Side Culverts	48
New Tile Drains	49
Right of Way Cleaned	50
Roadway Improvements	50
Public and Private Road Crossings	52
Cattle Guards Installed	53
Ditching	53
Land Slides and Washouts	54
Fences	54
Timber Bridges, etc., Filled	55
Main Line Re-Ballasted	56
Track Re-Surfaced	58
Ballast Loaded	59
Cinder Ballast	63
Other Materials Handled by Work Train	65
Materials Handled by Ditching Machine	66
Report of Bridge and Building Department	68
Maintenance of Repairs to Buildings	68
Tanks	70
Dwellings	71
Bridges and Trestles	72
Report of Telegraph Department	76
Telephone Train Despatching	76
Mileage of Telegraph and Telephone Circuits	77
Telephones and Telegraph Instruments in Service	78
Report of Superintendent of Traffic	81
Accidents	81
Physicians	85

PAGE

General Freight & Passenger Agent's Report 90

Report of Land Department 91

Mining Engineer—Preliminary Report 94

Financial Statements 98
- General Balance Sheet 100
- Comparative Statement of Earnings and Expenditures 101
- Expended on Construction—Iroquois Falls Branch 102
- Expended on Construction—Porcupine Branch 102
- Expended on Construction—Elk Lake Branch 103
- Expended on Additions and Betterments 103
- Expended on Construction—Main Line 104
- Comparative Statement of Maintenance of Way Expenses 105
- Comparative Statement of Equipment Expenses 106
- Comparative Statement of Traffic Expenses 107
- Comparative Statement of Transportation Expenses 108
- Comparative Statement of General Expenses 109
- Comparative Statement of Earnings and Expenses from 1905 to 1913..... 110
- Monthly Comparative Statement of Earnings and Expenses, 1912..... 112
- Passengers and Tons of Freight Carried, 1905 to 1913..... 134
- Traffic and Mileage Statistics 135
- Tons, one mile 136
- Average Wages 136
- Equipment Owned 137
- Freight Traffic Movement 138
- Statement of Land Purchased 140
- Townsites Accounts 141
- Statement of Materials and Supplies on Hand 142
- Detailed Statement of Wages Paid Employees 146
- Detailed Statement of Expenditures 170

Contracts 381
- Steel Passenger Cars 381
- Grading Cochrane Yard 383
- Construction of Steel Trestles 392
- Coal Contracts 400
- Agreements C.P.R.—Passenger Terminals, North Bay 403

Nipissing Central Railway:—
- Chief Engineer and Superintendent of Maintenance Report..... 410
- General Balance Sheet 412
- Comparative Statement of Earnings and Expenditures..... 413
- Expenditures on Construction, etc. 414
- Statement of Wages Paid Employees 415
- Monthly Statement Comparisons Earnings and Expenditures..... 418
- Details of Expenditures 425

Sixth Annual Report

OF THE

HYDRO-ELECTRIC POWER COMMISSION

OF THE

PROVINCE OF ONTARIO

FOR YEAR ENDED OCTOBER 31st

1913

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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1914

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TORONTO

To His Honour Sir John Morison Gibson, K.C.M.G.,
Lieutenant-Governor of Ontario.

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the Sixth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1913.

Respectfully submitted,

ADAM BECK,
Chairman.

TORONTO, February 15th, 1913

HONORABLE ADAM BECK,
Chairman, Hydro-Electric Power Commission,
Toronto, Ont.

SIR,—I have the honour to transmit herewith the Sixth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1913.

I have the honour to be,

Sir,

Your obedient servant,

W. W. POPE,
Secretary.

PREFACE

The following report gives a short summary of the work performed during the fiscal year. Attention is particularly directed to the new powers vested in the Commission by the Hydro-Electric Railway Act of 1913, and the Act of 1912, respecting the organization of inspection departments.

During this period contracts were entered into with the municipalities of Windsor and Walkerville, resulting in the extension of the Niagara System and the construction of 105 miles of 110,000 volts transmission lines with the necessary transformer stations. Also, owing to the rapid increase in the load in the Niagara district, increased capacity has been required at the Niagara, Dundas, London, St. Thomas and Toronto stations. Details of the various extensions made to the Niagara system will be found in the body of the report.

Early in the year contracts for power were entered into with the municipalities of the Beaverton-Cannington district. The most economical source of supply was found to be a development at Wasdell's Falls on the Severn River. This was a new departure on the part of the Commission, but after authorization by the government contracts were awarded and work has progressed favourably.

A large amount of engineering work has also been done in connection with a number of municipal underground systems and eleven municipalities have placed the construction work on their systems under the supervision of the Commission.

In addition to the above a great deal of information has been collected during the year on the stream-flow and storage possibilities of various rivers in the Province. The result of this work is shown by the Hydraulic Report, Chapter Six. This report is considerably larger than that of the previous year, and gives information in great detail.

Many demonstrations have also been given during the year in connection with the use of electrical energy on the farm, and considerable interest has been shown in this work.

The organization of electrical inspection departments has further engaged the active attention of the Commission, and many municipalities have organized inspection departments and appointed inspectors.

During the year many municipalities have acted upon the authority vested in the Commission and forwarded resolutions, requesting estimates and reports in relation to electric radial railways. A report has already been issued for the district north-east of Toronto.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HON. ADAM BECK, London, Chairman.

HON. JOHN S. HENDRIE, C.V.O., Hamilton, Commissioner.

W. K. McNAUGHT, M.P.P., Toronto, Commissioner.

W. W. POPE, Secretary.

F. A. GABY, Chief Engineer.

CONTENTS

Chapter		Page
I.	Legal Proceedings	1
	A. Acts	1
	B. Agreements	18
	C. Right of Way	18
	D. Crossings	18
	E. Underground Construction	19
	F. Overhead Construction	21
II.	Transmission System	23
	A. Steel Tower Transmission Lines	23
	B. Transformer Stations	29
	C. Wood Pole Transmission Lines	53
III.	Operation of the Systems	61
	A. Niagara System	61
	B. Port Arthur System	74
	C. Severn System	75
	D. St. Lawrence System	78
IV.	Municipal Work	83
	A. Municipal Advices	83
	B. Municipal Accounts	136
	C. Municipal Rates	156
	D. Municipal Purchases	163
	E. Fair Demonstrations	168
	F. Rural Demonstrations	174
	G. Demonstration Farms	183
	H. Underground Construction	192
	I. Electric Railway Projects	197
	J. Toronto Laboratory and Storehouse	199
V.	Hydraulic Investigations	213

ILLUSTRATIONS

	Page
Toronto Transformer Station	*Frontispiece*
Tower Erection	24
Standard Line Tower	25
Tower Erection	25
Niagara Falls Station and Arresters	29
Dundas Transformer Station	35
Wiring Diagram, Dundas Station	36
Standard 13,200 Volt Entrance Hoods	50
Power Consumption of Municipalities. *Chart*	64
Power Consumption of Municipalities. *Chart*	65
Power Consumption of Municipalities. *Chart*	66
Power Consumption of Municipalities. *Chart*	67
Power Consumption of Municipalities. *Chart*	68
Power Consumption of Municipalities. *Chart*	69
Power Consumption of Municipalities. *Chart*	70
Power Consumption of Municipalities. *Chart*	71
Power Consumption of Municipalities. *Chart*	76
Single Light Park Standard, Goderich	93
Single Light Park Standards, Goderich	93
Waterworks Pump, Galt	104
Lighting in Residential Districts, Galt	104
Street Lighting Standard, Goderich	115
Typical Wiring Arrangement, Georgetown	115
Old System of Street Lighting, Peterboro'	125
New Magnetite Street Lighting, Peterboro'	125
Renfrew Demonstration	169
Renfrew Demonstration	169
Collingwood Demonstration	171
Collingwood Demonstration	171
Goderich Demonstration	173
Coldwater Demonstration	173
Typical Service Installation	175
Blower Type of Ensilage Cutter	175
Typical Service Installation	177
Elevator Type of Ensilage Cutter	177
Individual Threshing Machine	179
Individual Threshing Machine	179
Blower Type of Ensilage Cutter	181
Elevator Type of Ensilage Cutter	181
Electrical Farm Equipment	184
Electrical Farm Equipment	184
Detail, Electric Water Heater	189
Electrical Farm Equipment	190
Duct Run, Wellington Street, Kingston	193
Underground Conduit, Vine Street, Hamilton	193
Underground Conduit leading out of Paris Station	195
Service Box on Bagot Street, Kingston	195
Toronto Laboratory and Storehouse	199

	Page
Corner of Shipping Room	200
Section of Lamp Stock	200
Wiring Diagram of Laboratory	201
Standards and Meter Department	202
Oscillograph	204
Baker Potential Ratiometer	205
Dividing Engine	205
Method of Obtaining Distribution Measurements	207
A Well Illuminated Street	208
300,000 Volt Test Transformer	209
Lamp Testing Transformer Diagram	212
Round Lake Dam, Showing Foundation Work Under Sluices	213
Round Lake Dam, Looking Down Stream	214
Round Lake Dam, Looking Up Stream	215
Wasdell's Falls, Wheelpit Excavation	221
Wasdell's Falls, Main Dam	222
Wasdell's Falls, General Scheme	223
Wasdell's Falls, General Lay-out	224
Wasdell's Falls, Cross Section, Power House	225
Wasdell's Falls, Main Dam	226
Wasdell's Falls, Main Dam	227
Wasdell's Falls, Form Erection	228
Severn River, Discharge Curve	273
Severn River, Hydrograph	274
Measuring Weir, Eugenia	275
Beaver River, Hydrograph	281
Beaver River, Weir Discharge Curve	282
Beaver River, Mass Curve	283
Beaver River, Diagram of Reservoir Capacity	284
Beaver River, Duration Curve	285
Beaver River, Storage Capacity Curve	286
Beaver River, Storage Capacity Curve	287
Beaver River, Characteristic Curve	288
Maitland River, Hydrograph	297
Maitland River, Discharge Curve	298
Maitland River, Drainage Curve	299
Credit River, Discharge Curve	311
Muskoka River (South Branch), Discharge Curve	312
Muskoka River, (North Branch), Discharge Curve	313
Saugeen River, Discharge Curve	314
Saugeen River, Discharge Curve	315
South River, Discharge Curve	316
Sturgeon River, Discharge Curve	317
Thames River, Discharge Curve	318

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

TORONTO TRANSFORMER STATION

SIXTH ANNUAL REPORT

OF THE

Hydro-Electric Power Commission

CHAPTER I

LEGAL PROCEEDINGS

ACTS

The following Act with respect to the Public construction and operation of Electric Railways was passed by the Legislature of the Province of Ontario during the Session of 1913.

This Act invests the Commission with powers to inquire and report on the cost of constructing and operating Electric Railways in any locality in which Electric Power or energy may be supplied by the Commission, and also authorizes any Municipal Corporation to enter into an agreement with the Commission for the construction and operation of Electric Railways or for the construction by the Commission and operation by the Corporations, the Municipalities to finance the cost of the same.

The Hydro-Electric Railway Act

3 Geo. V. Chap. 38.

An Act respecting the Public Construction and Operation of Electric Railways.

Assented to May 6th, 1913.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. This Act may be cited as *The Hydro-Electric Railway Act.* Short title.

2. In this Act, Interpretation.

"Commission" shall mean The Hydro-Electric Power Commission of Ontario. "Commission."

"Corporation" shall mean a municipal corporation, other than the Municipal corporation of a county. "Corporation."

3. Whenever required by the Lieutenant-Governor in Council so to do The Commission may enquire into, examine, investigate and report upon, Commission to enquire and report

(*a*) The cost of constructing and operating an electric railway, in any locality in which electrical power or energy may be supplied by The Commission under *The Power Commission Act;*

(*b*) The municipalities, the inhabitants of which will be served by such railway;

(*c*) The population of each of such municipalities as shown by the last enumeration thereof by the assessors;

(*d*) An estimate of the probable revenue from the railway;

(*e*) The practicability of the undertaking and its economic value to the locality to be served by it.

Agreement with corporations for construction of line.

4.—(1) A corporation or two or more corporations may if authorized by the Lieutenant-Governor in Council so to do enter into an agreement with the Commission for the construction, equipment and operation of an electric railway to be operated by electrical power or energy supplied by the Commission.

Matters which may be provided for in agreement

(2) The agreement may provide for,

(*a*) The location of the line of the railway;

(*b*) The character of the equipment and service to be furnished and the maximum tolls or fares to be chargeable thereon.

(*c*) The proportion in which the cost of construction, equipment, maintenance and operation of the railway shall be borne by each of the corporations interested.

(*d*) The issuing of debentures of the corporation or of each of the corporations for raising the amount of such cost.

(*e*) The proportion of the revenue from such railway to be paid annually by the Commission to each corporation after deducting the charges hereinafter mentioned.

(*f*) The construction of the railway upon any right of way acquired by the Commission for the transmission of electrical power or energy under *The Power Commission Act* and the amount chargeable to the railway by way of rental or otherwise for the use of such right of way.

Agreement for construction and operation by corporation.

(3) Instead of providing for the construction and operation of the Railway by the Commission, the agreement may provide for its construction by the Commission and for its operation by the Corporation, or for its construction and operation by the corporation or corporations,

and in either case for the supply by the Commission of the electrical power requisite for the operation of the railway on such terms and conditions as may be agreed on between the corporation or corporations and the Commission.

Construction on right of way of Commission.

(4) Where the railway is to be constructed and operated by the corporation or corporations, the Commission may agree with them to permit the railway to be constructed upon the right of way or other lands of the Commission on such terms and conditions as may be agreed on.

Approval of Lieutenant-Governor in Council.

(5) The agreement shall not come into effect until it has been sanctioned by the Lieutenant-Governor in Council and has been approved by by-law passed with the assent of the municipal electors of each municipality.

Annual payments by municipalities to defray cost.

5.—(1) The council of every corporation entering into an agreement with the Commission under this Act shall annually raise and pay over to the Commission such sums as may be required by it in the construction, equipment, maintenance and operation of the railway including the costs of the supply of electrical power or energy to the extent and in the proportions fixed by the agreement and for that purpose may issue debentures of the corporation payable in not more than forty years from the date of the issue thereof.

Assent of electors not necessary.

(2) It shall not be necessary to obtain the assent of the electors to the passing of any by-law for incurring a debt under this section.

Construction and operation by Public Utilities Commission.

6. Where the agreement provides for the construction and operation or for the operation of the railway by a corporation or by two or more corporations it shall also provide for the management of the railway and its operation by a Public Utilities Commission to be approved by the Lieutenant-Governor in Council and it shall provide as to the mode of appointing the members of the commission and for the proportions in which each corporation shall contribute to the cost of its construction, maintenance and operation and for the proportion in which each of them shall share in the income, revenue and profits derived from the operation of the railway, and such corporation or corporations or commission shall have the right to construct and operate the railway notwithstanding that it does not lie wholly within one or more of the municipalities, the corporations of which may have entered into the agreement.

Powers and duties of Public Utilities Commission.

7. A Public Utilities Commission appointed under the provisions of the next preceding section shall have all the powers and perform all the duties of a Public Utilities Commission appointed under *The Public Utilities Act*.

Powers of Commission as to construction and operation.

8. Subject to the provisions of section 5, where an agreement has been entered into under section 4 the Commission may construct, complete, equip, maintain, and operate the railway therein provided for, and for that purpose shall have and may exercise the powers of a company

incorporated by Special Act for the construction of such a railway under the provisions of *The Ontario Railway Act,* so far as the same are applicable.

Taking lands.

9. Where land is required for any of the purposes for which land may be acquired or expropriated under *The Ontario Railway Act,* the Commission in respect thereof shall have the powers and shall proceed in the manner provided by *The Public Works Act*, where the Minister of Public Works takes land or property for the use of Ontario, and the provisions of the said Act, shall, *mutatis mutandis* apply.

Application of revenue by Commission.

10. The Commission shall apply the revenue derived from the operation of the railway to the payment of working expenses of the railway and after payment of the same shall annually pay over the balance, if any, to the corporations, parties to the agreement in the proportions fixed thereby.

Application of profits by corporation.

11. All sums received by the corporation or corporations shall be applied in the first place in the payment of the principal and interest of any debt incurred under the authority of this Act in the manner prescribed by the Commission.

Certain sections of Railway Act not to apply.

12. Sections 68 to 97 of *The Ontario Railway Act* shall not apply to the Commission or to any railway constructed or operated by it.

Application of ss. 8-12.

13. Sections 8 to 12 shall apply only where the agreement provides for the construction of the railway by the Commission.

Actions not to be brought against Commission without fiat.

14. No action or prosecution shall be brought against the Commission or any member thereof or any of its officers under *The Ontario Railway Act* without the consent of the Attorney General of Ontario.

No liability for errors in estimates.

15. Neither the Province nor the Commission nor any member thereof shall incur any liability by reason of any error or omission in any estimates, plans or specifications prepared or furnished by the Commission.

Works vested in Commission.

16. Every railway and the works, property and effects held and used in connection therewith, constructed, acquired, operated and maintained by the Commission under this Act shall be vested in the Commission in trust for the Corporations parties to the agreement for the construction and operation of the railway.

The following Act was passed by the Legislature last Session to validate certain By-laws passed and contracts made with the various municipalities.

The Power Commission Act, 1913

3 Geo. V., Chap 12.

An Act to validate certain By-laws passed and contracts made pursuant to the Power Commission Act and amendments thereto respecting the Transmission of Electrical Power to Municipalities.

Assented to May 6th, 1913.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. This Act may be cited as *The Power Commission Act,* 1913. Short title.

2. The Municipal Corporation of the City of Brantford; The Municipal Corporation of the City of Windsor, The Municipal Corporation of the Town of Goderich, the Municipal Corporation of the Town of Paris, the Municipal Corporation of the Town of Milton, the Municipal Corporation of the Town of Clinton, the Municipal Corporation of the Village of Elmira, the Municipal Corporation of the Village of Hagersville, The Municipal Corporation of the Village of Georgetown, The Municipal Corporation of the Village of Acton, The Municipal Corporation of the Village of Caledonia and the Municipal Corporation of the Police Village of Rockwood, are added as Parties of the Second Part to the contract set out in Schedule "A" to *The Power Commission Act,* 1909, as varied and confirmed by the said Act, and as further varied and confirmed by the Act passed in the tenth year of the reign of His late Majesty King Edward the Seventh, chaptered 16, as amended by the Act passed in the first year of the reign of His Majesty King George the Fifth, chaptered 16, and as amended by the Act passed in the second year of the reign of His Majesty, King George the Fifth, and as amended by this Act, and the said contracts shall be binding upon the parties thereto respectively, Certain corporations added as parties to contract with Commission.

as to the City of Brantford, from the 4th day of November, 1912;
as to the City of Windsor, from the 20th day of December, 1912;
as to the Town of Goderich, from the 22nd day of January, 1913;
as to the Town of Paris, from the 9th day of November, 1912;
as to the Town of Milton, from the 5th day of November, 1912;
as to the Town of Clinton, from the 7th day of April, 1913;
as to the Village of Elmira, from the 28th day of February, 1913;
as to the Village of Hagersville, from the 11th day of November, 1912;
as to the Village of Georgetown from the 23rd day of December, 1912;
as to the Village of Acton, from the 30th day of April, 1912;
as to the Village of Caledonia, from the 26th day of July, 1912;
as to the Police Village of Rockwood, from the 23rd day of January, 1913.

Contract amended.

3. The names of the said Municipal Corporations are added to Schedule "B" of the said contract, and such Schedule shall be read as containing the particulars set out in Schedule "A" to this Act.

Contracts with certain municipalities confirmed.

4. The contracts set out as Schedules "A," "B," "C," "D," "E," "F," "G," "H," "I" and "J" hereto, between the Hydro-Electric Power Commission of Ontario and the Corporations of Welland, Port Dalhousie, Midland, Penetanguishene, Barrie, Coldwater, Stayner, Elmvale, Collingwood and Peterborough, are hereby confirmed and declared to be legal, valid and binding upon the parties thereto respectively, and shall not be open to question upon any grounds whatsoever, notwithstanding the requirements of *The Power Commission Act,* or the amendments thereto or any other statute.

By-laws confirmed.

5. By-laws Nos. 1216 and 1217, of the Corporation of the City of Brantford;

By-law No. 7, of 1913, of the Corporation of the Town of Goderich;

By-law No. 465, of the Corporation of the Town of Milton;

By-law No. 232, of the Corporation of the Village of Elmira;

By-law No. 178, of the Corporation of the Village of Hagersville;

By-law No. 351, of the Corporation of the Village of Georgetown;

By-law No. 449, of the Corporation of the Village of Acton;

By-laws Nos. 143 and 147, of the Corporation of the Village of Caledonia;

By-law No. 3, of the Corporation of the Police Village of Rockwood;

By-laws Nos. 432 and 460, of the Corporation of the Town of Welland;

By-law No. 321, of the Corporation of the Village of Port Dalhousie;

By-law No. 772, of the Corporation of the Town of Midland;

By-laws Nos. 447 and 448, of the Corporation of the Town of Penetanguishene;

By-law No. 771, of the Corporation of the Town of Barrie;

By-laws Nos. 33 and 34, of the Corporation of the Village of Coldwater;

By-law No. 485, of the Corporation of the Town of Stayner.

By-laws Nos. 662 and 663, of the Corporation of the Township of Flos;

By-laws Nos. 783 and 795, of the Corporation of the Town of Collingwood;

By-laws Nos. 1704 and 1713, of the Corporation of the City of Peterborough;

By-laws Nos. 346 and 350, of the Corporation of the Town of North Bay;

By-law No. 11 of the Township of Eramosa passed on the 13th day of January, 1913

are confirmed and declared to be legal, valid and binding upon such corporations and the ratepayers thereof, respectively, and shall not be open to question upon any ground whatsoever, notwithstanding the requirements of *The Power Commission Act,* or the amendments thereto or of any other Statute.

By-laws of Windsor and Paris confirmed.

6. By-law No. 1353, of the Corporation of the City of Windsor, passed on the 4th day of July, 1910, to provide for the issue of debentures to the extent of one hundred thousand dollars for the cost of a plant to distribute electric power, and By-law No. 568, of the Corporation of the Town of Paris to authorize the issue of debentures to the extent of twenty-five thousand dollars for the purpose of extending the electric system of the said Town, and By-law No. 541, of the said Corporation, of the Town of Paris, are hereby confirmed and declared to be legal, valid and binding, notwithstanding any defect in substance or form therein, or any irregularity in the manner of passing the same, and the debentures issued, as provided by the said By-laws, shall be legal and valid and binding upon the said Corporations respectively, and the said ratepayers thereof.

By-laws, 715 Dundas, 1044 Galt, 714 Ingersoll, confirmed.

7. By-law Number 715 of the Municipal Corporation of Dundas, appointing a Water, Light and Power Commission;

By-law Number 1044 of the Municipal Corporation of the Town of Galt, appointing a Water, Light and Power Commission; and

By-law Number 714 of the Municipal Corporation of the Town of Ingersoll, appointing a Water, Light and Power Commission,

are hereby confirmed and declared to be legal, valid and binding as from the respective dates of the passing thereof.

SCHEDULE A.

Additions to Schedule B, to the Contract set out in Schedule A to 9 Edw. VII., c. 19.

Name of Municipal Corporation.	Maximum price of power at Niagara Falls.	No. of Volts.	Quantity of Power applied for in horse-power.	Estimate maximum cost of power ready for distribution in municipality.	Estimate proportionate part of cost to construct transmission line, transformer stations and works for nominally 30,000 h.p., with total capacity of 60,000 h.p.	Estimate of proportionate part of line loss and of part cost to operate, maintain, repair, renew and insure transmission line, transformer stations and works for nominally 30,000 h.p., with total capacity of 60,000 h.p.
Brantford			1,200	19 50	107,700	6,353
Windsor			2,500	38 00	1,227,800	25,896
Goderich			700	37 00	151,690	10,802
Paris			600	21 00	62,928	3,551
Milton			700	28 00	116,963	6,516
Clinton			300	41 00	94.470	4.105
Elmira			200	38 00	49,180	2,948
Hagersville			150	33 21	32,868	1,725
Georgetown			200	36 00	45,214	2,778
Acton			200	36 00	43,434	2,801
Caledonia			25	29 10	3,515	268
Rockwood			50	38 00	12,676	715

THIS INDENTURE made in duplicate this 30th day of September, in the year of our Lord, A.D. 1912.

BETWEEN

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO, hereinafter called the "Commission,"

Party of the First Part,

—and—

THE MUNICIPAL CORPORATION OF THE TOWN OF WELLAND, hereinafter called the "Corporation,"

Party of the Second Part.

WHEREAS pursuant to an Act to provide for the transmission of electrical power to Municipalities the Corporation applied to the Commission for a supply of power and the electors of the Corporation assented to a By-law authorizing the Corporation to enter into a contract with the Commission for such power.

1. NOW THEREFORE this indenture witnesseth that in consideration of the premises and of the agreements of the Corporation set forth, subject

to the provisions of said Act and amendments and of the said contract, the Commission agrees with the Corporation:—

(*a*) To reserve and deliver at the earliest possible date 100 h.p. of electrical power to the Corporation.

(*b*) At the expiration of thirty (30) days' notice in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electrical power when called for in blocks of 50 h.p. each until 1,000 h.p. is being delivered or is reserved by the Company. And then in blocks of 100 h.p. each for any aditional power.

(*c*) To use at all times first-class, modern, standard, commercial, apparatus and plant, and to exercise due skill and dilligence so as to secure the most perfect operation of the plant and apparatus of the Corporation.

(*d*) Power shall be delivered to the Corporation at approximately 12,000 volts or 2,200 volts—as may be agreed.

2. In consideration of the premises and of the covenants and agreements herein set forth, the Corporation agrees with the Commission:—

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement, so as to be able to give notice as specified in Paragraph 1 (*a*).

(*b*) Subject to the provisions of Paragraph 2 (*h*) herein to pay the Commission the cost price per h.p. per annum to the Commission for all power taken.

(*c*) Further to pay annually interest at the rate of four per cent. (4%) per annum on moneys expended, if any, by the Commission on capital account for the construction of necessary works, if any, required to supply said power for the said Corporation.

(*d*) Also to pay an annual part of the cost of construction of the said works so as to form in 30 years a sinking fund for the retirement of any securities issued by the Province of Ontario in connection herewith.

(*e*) To pay any cost of operating, maintaining, repairing, renewing and insuring the said works.

(*f*) The amounts payable in accordance with Clauses 2 (*b*) and (*c*) shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the office of the Commission at Toronto, and bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*g*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*h*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes same or not. When the greatest amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it for twenty consecutive minutes, the Corporation shall pay for this greater amount of power during the entire month. The taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for and on the part of the Commission to hold in reserve an additional block of power in accordance with the terms and conditions of this contract.

When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90%, the Corporation shall pay for 90% of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant to be approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Commission and the Corporation.

3. This agreement shall remain in force for thirty years from the date hereof.

4. (*a*)—The power so taken shall be measured at the 12,000 volt side of the step-down transformers in the sub-station in the Corporation by Graphic Recording Curve Drawing Meters, subject to test as to accuracy by either party hereto.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder; and when voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The Engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. In case the Commission should at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strike, lock-out, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission

shall not be bound to deliver such power during such times, and the Corporation shall not be bound to pay the price of said power during such time, but as soon as the cause of such interruption is removed, the Commission shall without any delay supply said power as aforesaid, and the Corporation shall take the same and shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Company due to any cause or causes, other than those provided for by the next preceding paragraph hereof, the Commission shall recover and pay to the Corporation as liquidated and ascertained damages and not by way of penalty, as follows:—For any interruption less than one hour double the amount payable for power which should have been supplied during the time of such interruption; and for any interruption of one hour or more, the amount payable for the power which should have been supplied during the time of such interruption and twelve times the last mentioned amount in addition thereto, and all moneys payable under this paragraph when the amount thereof is settled between the Commission and the Company may be deducted from any moneys payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments.

8. If at any time any other Municipal Corporation or pursuant to the said Act, any railway or distributing company, or any other Corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation in writing, of a time and place and hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantity of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor-in-Council.

No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quality of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a Municipal Corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable to pay for the power so supplied, or otherwise in respect thereof. In order to prevent discrimination by the Municipal Corporation, no power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or persons or manufacturing companies inside the limits of the Corporation, but such power shall not be sold for less than the cost and without discrimination as regards price and quantity.

9. In case any Municipal Corporation, or any person, firm or corporation which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Power Company shall suffer damages by the act or neglect of the Power Company, and such municipal corporation, person, firm or corporation would, if the Power Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings to bring such actions for or on behalf of such municipal corporation, person, firm, or corporation, and notwithstanding any Acts, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such Municipal Corporation, person, firm or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such municipal corporation, person, firm or corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

10. If difference arise between Corporations to whom the Commission is supplying power, the Commission may upon application fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under the Act respecting Enquiries concerning Public Matters.

11. If difference arise between the Corporation and the Commission, the Lieutenant-Governor-in-Council may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Lieutenant-Governor-in-Council shall in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Lieutenant-Governor-in-Council shall have all the powers that may be conferred Commissioner appointed under the Act respecting Enquiries concerning Public Matters.

12. This agreement shall extend to, be binding upon and enure to the benefit of the successors and assigns of the parties hereto.

IN WITNESS WHEREOF the Commission and the Corporation have respectively affixed their corporation seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION.

(Signed) A. BECK, Chairman. [Seal]

(Signed) W. W. POPE, Secretary.

MUNICIPAL COUNCIL TOWN OF WELLAND

(Signed) G. W. SUTHERLAND, [Seal]
Mayor.

(Signed) GEORGE R. BOYD, Clerk.

(Signed) F. A. MILLEN, Witness.

THIS INDENTURE made in duplicate this 20th day of July, in the year of our Lord, 1911.

BETWEEN:

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO, hereinafter called the "Commission,"

Party of the First Part,

—and—

THE MUNICIPAL CORPORATION OF THE TOWN OF MIDLAND, hereinafter called the "Corporation,"

Party of the Second Part.

WHEREAS, pursuant to "An Act to provide for transmission of electrical power to Municipalities," the Corporation applied to the Commission for a supply of power, and the Commission have entered into a contract with the Simcoe Railway & Power Co., and the electors of the Corporation assented to a by-law authorizing the Corporation to enter into a contract with the Commission for such power.

1. NOW THEREFORE THIS INDENTURE WITNESSETH that in consideration of the premises and of the agreements of the Corporation herein set forth, subject to the provisions of said Act and of the said contract, the Commission agrees with the Corporation:—

(*a*) At the expiration of thirty days' notice in writing from the Corporation to the Commission, to reserve and deliver when called for 400 h.p. or more of electric power to the Corporation. Said notice shall be given not later than June 15th, 1911.

(*b*) At the expiration of thirty days' notice in writing which may be given by the Corporation from time to time, during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for in blocks of 50 h.p. each until 500 h.p. is being delivered or is reserved by the Power Company, and then in blocks of 100 h.p. each until the total amount so reserved or delivered shall amount to 1,600 h.p.

(*c*) To use at all times first-class, modern, standard, commercial apparatus and plant, and to exercise all due skill and diligence so as to secure the satisfactory operation of the plant and apparatus of the Corporation.

(*d*) The power shall be delivered to the Corporation at approximately 2,200 volts and at approximately 60 cycles per second.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to give notice as specified in paragraph 1 (*a*).

(*b*) Subject to the provisions of paragraph 2 (*e*) hereof, to pay the Commission the following prices: $21.00 per h.p. per annum for all power

reserved or taken until the demands of the Commission on the Power Company shall equal or exceed 500 h.p.

When the demand of the Commission on the Power Company shall have increased to 500 h.p. to pay $20.00 per h.p. per annum for all or any proportion thereof reserved or taken by the Corporation.

When the demand of the Commission on the Power Company shall have increased to 1,000 h.p. to pay $19.00 per h.p. per annum for all or any proportion thereof reserved or taken by the Corporation.

When the demand of the Commission on the Power Company shall have increased to 1,500 h.p. to pay $17.50 per h.p. per annum for all or any proportion thereof reserved or taken by the Corporation.

Nothing herein contained shall bind the Commission to supply power on the demand of the Corporation after the demand of the Commission on the Power Company exceeds 1,600 h.p. unless the Power Company has power available or capable of development.

(*c*) The power shall be paid for in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the office of the Commission at Toronto, and bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the greatest amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it for twenty consecutive minutes, the Corporation shall pay for this greater amount of power during the entire month. The taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for and on the part of the Commission to hold in reserve an additional block of power in accordance with the terms and conditions of this contract.

When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90%, the Corporation shall pay for 90% of said power divided by the Power Factor.

(*f*) To use at all times first-class, modern, standard, commercial apparatus and plant to be approved by the Commission.

(*g*) To exercise all due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Commission and the Corporation.

3. This agreement shall remain in force for ten years from the date of the expiration of the said first notice of 30 days. The Corporation may, at its option, continue this agreement for one or two further consecutive terms, the first of these two additional terms being of five years duration, and the second of such length that the expiry thereof shall fall on the 10th day of September, 1929.

(*a*) Provided, however, that in the event of the Commission being in a position to furnish power either by a further agreement with the Simcoe Railway & Power Company or otherwise, the Corporation may, at its option. continue this agreement for a further term of twelve years duration.

(*b*) The Corporation may exercise the first of these options by giving notice in writing of its intention to continue this agreement for the second term of five years at least two years before the expiration of the first term of ten years.

(*c*) The Corporation may exercise the second of these options by giving notice in writing of its intention to continue this agreement for the third term until the expiry date on September 10th, 1929, at least two years before the expiration of the second term of five years.

(*d*) The Corporation may, subject to the conditions set out in paragraph 3 (*a*), exercise the further option therein mentioned by giving the Commission notice in writing of its intention to continue this agreement for the further term of twelve years at least two years before the expiration of the term falling on the 10th day of September, 1929.

4. The power shall be approximately 2,200 volts, 60 cycle, 3 phase, alternating commercially continuous twenty-four hour power every day in the year except as provided herewith, and shall be delivered by the Commission to the Corporation at the Low Tension outlet bushings of the Sub-station of the Simcoe Railway & Power Co., at the outskirts of the Town of Midland.

(*a*) The power so taken shall be measured at the 2,200 volt switchboard in said Sub-station by Graphic Recording Curve Drawing Meters, subject to test as to accuracy by either party hereto.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the Sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder; and when voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The Engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. In case the Commission should at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strike, lock-out, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such times, and the Corporation shall not be bound to pay the price of said power during such time, but as soon as the cause of such interruption is removed, the Commission shall without any delay supply said power as aforesaid, and the Corporation shall take the same and shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Power Company due to any cause or causes, other than those provided for by the next preceding paragraph hereof, the Commission shall recover and pay to the Corporation as liquidated and ascertained damages, and not by way of penalty, as follows:—For any interruption of less than one hour double the amount payable for power which should have been supplied during the time of such interruption; and for any interruption of one hour or more the amount payable for the power which should have been delivered during the time of such interruption, and six times the last mentioned amount in addition thereto, and all moneys payable under this paragraph, when the amount thereof is settled between the Commission and the Company, may be deducted from any money payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments.

8. If at any time any other Municipal Corporation or, pursuant to said Act, any railway or distributing company, or any other Corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation in writing, of a time and place and hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favor of the applicants as to the price to be paid, for equal quantity of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor-in-Council.

No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation will not be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a Municipal Corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable to pay for the power so supplied, or otherwise in respect thereof. In order to prevent discrimination by the Municipal Corporation, no power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or persons or manufacturing companies inside the limits of the Town of Midland, but such power shall not be sold for less than the cost and without discrimination as regards price and quantity.

9. In case any municipal corporation, or any person, firm or corporation which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Power Company shall suffer damages by the act or neglect of the Power Company, and such municipal corporation, person, firm or corporation would, if the Power Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings or bring such action for or on behalf of such municipal corporation, person, firm or corporation, and notwithstanding any Acts, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such municipal corporation, person, firm or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such Municipal Corporation, person, firm or Corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

10. If differences arise between corporations to whom the Commission is supplying power, the Commission may upon application fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the power that may be conferred upon a Commissioner appointed under the Act respecting Enquiries concerning Public Matters.

11. If differences arise between the corporation and the Commission, the Lieutenant-Governor-in-Council may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Lieutenant-Governor-in-Council shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Lieutenant-Governor-in-Council shall have all the powers that may be conferred upon a Commissioner appointed under the Act respecting Enquiries concerning Public Matters.

12. This agreement shall extend to, be binding upon and enure to the benefit of the successors and assigns of the parties hereto.

IN WITNESS WHEREOF the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION.
(Signed) A. BECK, Chairman. [Seal]
(Signed) W. K. McNAUGHT, Commissioner.

MUNICIPAL CORPORATION TOWN OF MIDLAND.
(Signed) DIGBY HARRELL, Mayor. [Seal]

(Signed) FRANK R. WESTON, Clerk.

Agreements between the Hydro-Electric Power Commission and the Municipal Corporation of the Village of Port Dalhousie; the Municipal Corporation of the Town of Penetanguishene; the Municipal Corporation of the Town of Barrie; the Municipal Corporation of the Town of Coldwater; the Municipal Corporation of the Town of Staynor, the Municipal Corporation of the Police Village of Elmvale; the Municipal Corporation of the Town of Collingwood, and the Municipal Corporation of the City of Peterborough, which should appear in the foregoing Act, have been omitted.

AGREEMENTS

During the fiscal year, agreements for a supply of power have been made with the Municipalities of Beaverton, Thorndale, Cannington, Brechin, Sunderland, Woodville, Winchester, Brockville, Prescott, Chesterville, Hagersville, Elmvale, Welland, Port Dalhousie, Port Robinson, Windsor, Peterborough, and the Township of Toronto.

RIGHT OF WAY

High Tension Lines

Contracts having been entered into with the Municipalities of Windsor and Walkerville, it was found necessary to purchase additional right-of-way from St. Thomas to Chatham, a distance of 58 miles, and from Chatham to Windsor, a distance of 47 miles, making a distance of 105 miles in all. After careful consideration and investigation of the whole matter the Commission decided it would be in the public interest to purchase the land upon which the High Tension towers were to be erected outright in fee simple instead of following the previous plan of buying thirty year easements. It was, therefore, decided that a strip of land 66 ft. wide would be purchased for this section of the line.

With this end in view the Right-of-way staff was again organized, consisting of Chief Right-of-way Agent and two assistants, which was subsequently increased to four assistants. On this section of the line there are some 475 owners to be dealt with and the agreements included the taking of the land outright, damages to trees, crops, fences, and moving of buildings, etc.

In order that the Commission would have direct supervision over every branch of the work it was decided by the Board that the work would be carried on by themselves instead of being let out under contract, and the results so far have fully justified the Commission in this decision.

Work has been vigorously pushed and a large number of owners have been settled with. There are still a number of agreements outstanding, but it is expected that these will be closed up within a short time.

It was decided to open an office at Chatham in connection with the Engineering Department in order that the work might be facilitated.

Low Tension Lines

During the past year approximately two hundred miles of low tension pole lines have been constructed, about forty-five miles in the eastern part of the Province from Morrisburg to Prescott, Winchester, Chesterville, and one hundred and fifty miles of line in the central part of the Province. Two of the assistant Right-of-way agents have been on this work continuously, securing easements and leases from the various owners, settling for tree trimming and other damages.

CROSSINGS

It has been found necessary during the past year to secure permission from the various steam and electric railway, telephone and telegraph companies for the crossing of their lines by the wires of the Commission. In each case blue-prints

and formal application has been made to the Company and where the consent of the Company was given the matter ended. In cases where the Company refused the sanction the crossing additional blue-prints were made and formal application sent to the Board of Railway Commissioners at Ottawa, for their ruling in these matters. It is expected in view of the fact that the Transmission line from St. Thomas to Windsor is now well under way that the number of these crossings will be greatly increased during the coming year.

UNDERGROUND CONSTRUCTION

In accordance with the joint application of the City of Hamilton, dated April 25th, 1912, to the Board of Railway Commissioners for Canada and the Hydro-Electric Power Commission of Ontario, set out in the Fifth Report, the Commission took this matter up. The representatives of the City of Hamilton and the interested Companies waited upon the Board a number of times, and after a thorough and careful investigation by the Engineering Department, the following order was made by the Board:—

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

Dated the 14th day of November, A.D. 1912.

In the matter of overhead lines or wires of the Hamilton Electric Light and Cataract Power Company, Limited, The Hamilton Cataract Power, Light and Traction Company, Limited, the Cataract Power Company of Hamilton, Limited, and of the Hydro-Electric Department of the City of Hamilton, on certain streets in the City of Hamilton.

And in the matter of the Power Commission Act of 1912.

UPON the report of their Engineer the Commission being of the opinion that it is necessary and expedient for the protection of life and property and for the convenience of the public that the use of overhead lines or wires of the Hamilton Electric Light and Cataract Power Company, Limited, the Hamilton Cataract Power, Light and Traction Company, Limited, the Cataract Power Company of Hamilton, Limited, and of the Hydro-Electric Department of the City of Hamilton, upon those portions of the highways or public communications hereinafter named in the City of Hamilton, should be discontinued and disallowed, and that such lines or wires should be placed and carried in underground conduits, to be constructed and maintained in accordance with the directions and to the satisfaction of the Commission, and that any and all right or rights to carry lines or wires on poles on the said portions of the said highways or public communications in the said City of Hamilton which may have been given by any Act, or by any municipal by-law, license or agreement, shall be abrogated, as herein provided.

IT IS ORDERED that the use of overhead lines or wires, other than trolley wires, of the Hamilton Electric Light and Cataract Power Company, Limited, the Hamilton Cataract Power, Light and Traction Company, Limited, the Cataract Power Company of Hamilton, Limited, and of the Hydro-Electric Department of

the City of Hamilton, on the following portions of highways or public communications in the City of Hamilton, namely:—

Catharine Street from Jackson Street to Rebecca Street,
John Street from Hunter Street to Rebecca Street,
Hughson Street from Hunter Street to Jackson Street,
Hughson Street from King Street to Gore Street,
James Street from Hunter Street to Stuart Street,
McNab Street from Main Street to Vine Street,
Charles Street from Main Street to King Street,
Park Street from Main Street to Merrick Street,
Bay Street from Main Street to York Street,
Jackson Street from James Street to Catharine Street,
Main Street from Bay Street to Catharine Street,
King Street from Sophia Street to Stirton Avenue,
York Street from Bay Street to James Street,
King William Street from James Street to Hughson Street,
Rebecca Street from James Street to Catharine Street,
Merrick Street from James Street to Park Street, as shown on the map or plan hereto attached,

shall be discontinued as hereinafter provided, and that any and all right or rights to carry lines or wires, other than trolley wires, on poles on the said portions of the said highways or public communications in the said City of Hamilton, which may have been given by any Act, municipal by-law, license or agreement shall be abrogated.

IT IS FURTHER ORDERED that the said lines or wires shall be placed and carried in an underground conduit system or systems which shall be constructed in accordance with plans and specifications approved in writing by the Commission, and that such underground conduit system or systems shall be maintained to the satisfaction of the Commission, in accordance with such directions as may be given by the Commission from time to time.

IT IS FURTHER ORDERED AND DIRECTED that plans and specifications for such underground conduit system or systems shall forthwith be prepared by the Hydro-Electric Department of the City of Hamilton and submitted by the said Department to the Commission not later than January 2, 1913, and that all information for the design and construction of the underground conduit system or systems required by the said Department for the preparation of the said plans and specifications shall be delivered to the said Department by the said Companies on or before the 16th day of December, 1912.

IT IS FURTHER ORDERED AND DIRECTED that the Hydro-Electric Department of the City of Hamilton shall with all due dispatch proceed to construct and complete or cause to be constructed and completed the said underground conduit system or systems in accordance with the plans and specifications above referred to, with such amendments as may be made from time to time.

IT IS FURTHER ORDERED AND DIRECTED that upon notice by the Commission from time to time of the completion of any portion of the said underground conduit system or systems for any portion of the said highways or public communications, the Companies shall within the time mentioned in such notice

discontinue the use of overhead lines and wires, other than trolley wires, upon the portion of the said highways or public communications covered by the said notice, and any right to carry lines or wires, other than trolley wires, on poles on the portions of the said highways or public communications covered by such notice shall be abrogated as of the date mentioned in such notice.

IT IS FURTHER ORDERED AND DIRECTED that the cost of the construction and maintenance of the said underground conduit system or systems shall be paid proportionately by the said Hydro-Electric Department of the City of Hamilton and the said Companies in accordance with such portion of the said underground conduits as may be set aside for the said Department or for any of the said Companies in the said plans and specifications, or any amendment thereof: and payments of such proportions shall be made by the respective Companies from time to time to the Hydro-Electric Department of the City of Hamilton within fifteen (15) days after such payment is demanded by the said Department, such demands being based upon progress certificates of the Engineer in charge of the work in question.

IT IS FURTHER ORDERED AND DIRECTED that the Hydro-Electric Department of the City of Hamilton (or the City of Hamilton), shall pay to the said Companies such sum or sums, if any, by way of compensation for the removal of such works as are discontinued on the said street or streets at such times and in such manner as the Commission may hereafter by order determine.

IT IS FURTHER ORDERED AND DIRECTED that the provisions of this order shall be carried out in accordance with such further orders, directions or regulations as the Commission may deem necessary to make from time to time.

HYDRO-ELECTRIC POWER COMMISSION,

(Signed) A. Beck, *Chairman.*
(Signed) W. K. McNaught, *Commissioner.*

Examined and Certified
a True Copy,
(Signed) W. Pope, *Secretary.*

OVERHEAD CONSTRUCTION

On July 17th, 1913, the City of Toronto applied to the Commission for the approval of works in connection with the Civic Car Lines built on St. Clair Avenue for the conducting, furnishing, and distributing of electricity as shown on the plans set with the application. The representatives of the City, the Toronto Electric Light Company, the Interurban Electric Company and the Toronto Hydro-Electric System met at the office of the Commission in this matter a number of times and the matter was gone into thoroughly.

The Engineering Department made a careful investigation and reported such changes and alterations of the wires of the various companies as would be in the public interest. These changes were agreed upon by the Companies, and upon the report of the Engineering Department the Board made the following order in the matter:

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

In the matter of the application of the Corporation of the City of Toronto for the approval of works for the conducting, furnishing and distributing of electricity in, under and upon certain highways in the City of Toronto, as shewn on plans of the City of Toronto for the Civic Car lines on St. Clair Avenue from Yonge Street to the Grand Trunk Railway crossing (Northern Division) Sheet 1—from Yonge Street to Walmer Road; Sheet 2—from Kendal Avenue to Alberta Avenue; Sheet 3—from Oakwood Avenue to the Grand Trunk Railway crossing (Northern Division), as filed with the application.

UPON THE REPORT of the Engineer of the Board and proof of service of application upon the Toronto Electric Light Company, the Interurban Electric Company and the Toronto Hydro-Electric System, and the parties having appeared and been heard:

IT IS ORDERED THAT the construction of the overhead wires and cables and the structures for the carrying of same for the operation of the St. Clair Avenue civic car lines, as shown on the plans, Numbers 1, 2, and 3, on file, and set out in the application, is approved, upon the completion of the changes, as set out in the report of the Engineer, hereto attached.

IT IS FURTHER ORDERED AND DIRECTED that the wires, cables and structures of the Toronto Electric Light Company, the Interurban Electric Company and the Toronto Hydro-Electric system, be re-constructed to give a minimum clearance of five feet between the wires, cables and structures of the above companies and the wires, cables and structures of the City of Toronto Civic Car lines on St. Clair Avenue, as set out in the Engineer's report hereto attached and the revised plans submitted with the application.

IT IS FURTHER ORDERED AND DIRECTED that the above changes in the lines and systems of the companies required to be done shall be carried out by the companies at the expense of the Applicant, and the cost of such work shall be submitted to the Commission for approval.

THE APPLICANT SHALL SUBMIT PLANS to the respective parties where interference of the system occurs, showing the present location and the reconstructed work to comply with the above ruling. Three copies of such revised plans shall be submitted to the Commission.

IN THE CARRYING OUT OF the above orders, the Commission shall be notified in sufficient time, so that a representative may be on the ground for the purpose of inspection and to obtain all data on costs of the work.

DATED this 14th day of August, A.D. 1913.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*

W. K. McNaught.

CHAPTER II

TRANSMISSION SYSTEMS

STEEL TOWER TRANSMISSION LINES

Preliminary Surveys

The surveys for the route of the Windsor Transmission Line were commenced in January, 1913, although a considerable amount of preliminary investigation was done during the years 1911 and 1912.

Early in January, 1913, an exhaustive study was begun of routes between St. Thomas and Windsor, taking into consideration relative costs, right of way, length of line, difficulties of construction of tower and wood pole lines, necessity for bridging and the general character of the country passed through. Several different routes were investigated and the following finally adopted.

Route

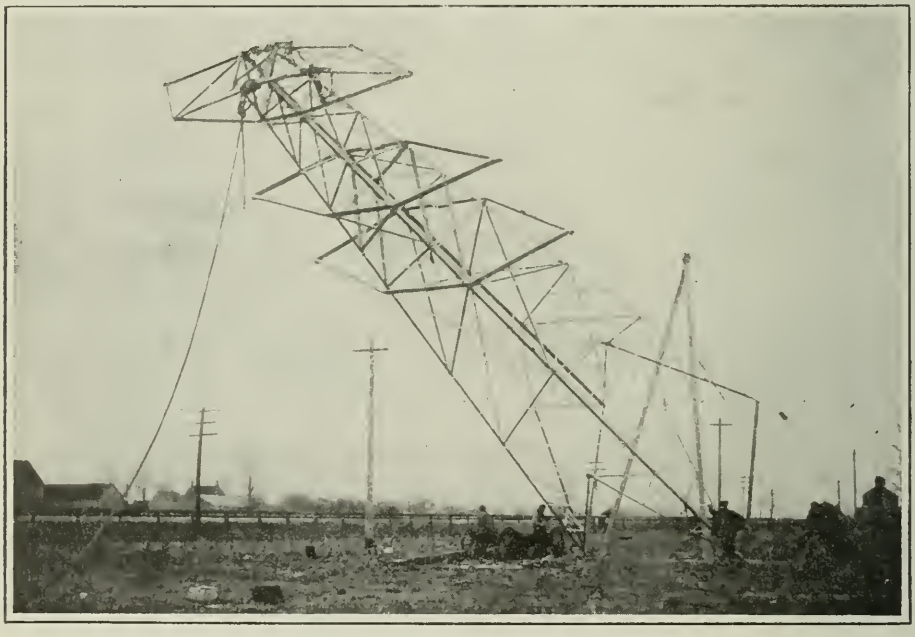
Commencing at the St. Thomas Substation, this line runs in a westerly direction a distance of 1.4 miles to the intersection of the Edgeware Road and crosses the Southwestern Traction and the Wabash Division of the Grand Trunk. It then deflects to the left and paralleling the Edgeware Road, it runs for a distance of 7 miles to a point immediately south of the Michigan Central Railway near the Village of Shedden. In this section it crosses Dodd's Creek and the main line of the Michigan Central Railway. At Shedden the line deflects to the left crossing the Pere Marquette Railway there and parallels this railway for a distance of 37.1 miles to a point just west of Ridgetown. In this section it passes through the villages of Shedden, Iona, Dutton, West Lorne, Rodney, Muirkirk and Highgate. and after crossing the Pere Marquette Railway just east of Ridgetown, passes through the northern part of this town. At this point it deflects to the right and runs straight across country, a distance of 10.7 miles to a point in Lot 7, Concession 3, R.T. Township of Harwich. In this section the main line of the Michigan Central Rly. is crossed. The line then deflects to the left and paralleling the road allowances, runs in a southwesterly direction through the City of Chatham, a distance of 3.5 miles, to a point in Lot 20, Concession 2, R.T. Township of Raleigh. At this point it deflects to the right and parallels the G. T. Rly. immediately to the south of it for a distance of 3.3 miles to the intersection of this railway with the Canadian Pacific Rly. It then deflects to the left and parallels the Canadian Pacific Rly. immediately on the south side of it for a distance of 39.8 miles to Walkerville Junction, where a suitable substation site can be had. The total length of this line is 102.8 miles, being much the shortest line of all those investigated. For many reasons it is the most economical to be built on account of the great length of line which parallels and is adjacent to railway lines, right of way would be much cheaper than any other line investigated. Also construction could be done at a lesser cost on account of the railway facilities for distribution of material. From Chatham to Walkerville Jct. the amount of bridging necessary would be slightly more than that of any other line on account of the fact that it is much closer to Lake St. Clair where the rivers and drains are much larger. This, however, is not a serious matter and would count very little against the choice of a location.

Contracts for Material

During the latter part of 1912 various types of transmission line construction work were considered, and it was decided to use tandem construction, where the three wires of each circuit would be in one plane approximately vertical, and removed about 7 feet from the face of the conductor support.

On account of market and other conditions, No. 3/0 B. & S. gauge copper cable was specified for conductors, and a standard span of 660 feet between conductor supports was adopted.

The standard specifications of the Commission were issued January 29th, 1913, and tenders asked for the supply of the different kinds of transmission line material required.



Tower Erection—Windsor Extension

Contracts for this material were let to the following companies:—

To the Canadian Bridge Co., of Walkerville, the supply of steel towers and footings.

To the Galt Malleable Iron Co., the supply of malleable iron clamps.

To the Canadian Porcelain Co., of Hamilton, the supply of insulators.

To the Canada Wire and Cable Co., the Imperial Wire and Cable Co., and the Steel Company of Canada, the supply of No. 3/0 B. & S. gauge copper cable.

Telephone line material was taken from the Commission's stores.

Organization

Early in 1913 instructions were issued by the Commission to undertake the work of construction of the Windsor Transmission and Telephone lines, along lines similar to the construction of the Low Tension lines, and an organization was formed to take care of this work.

The gangs employed for transmission line work were as follows:—

Two gangs, each of about 25 men, excavating for tower footings.

Two gangs, each of about 20 men, setting tower footings.

One gang of about 10 men building culverts and bridges, and temporary fencing.

One gang of about 12 men clearing right-of-way.

Two gangs, each about 25 men, assembling towers.

Two gangs, each 7 men, erecting towers.

The unloading of tower steel was done by a gang of six men, and the steel was delivered to the tower locations by teams hired along the line.

Each one of the above gangs was in charge of a foreman, who received his instructions from the general foreman in his section.

The gangs employed for Telephone line work were as follows:—

One gang of 15 men digging holes.

One gang of 10 men erecting poles.

One gang of 3 men unloading and framing poles.

One gang of four men assembling and erecting cross arms, setting anchors and attaching guys.

One gang of 8 men stringing wire.

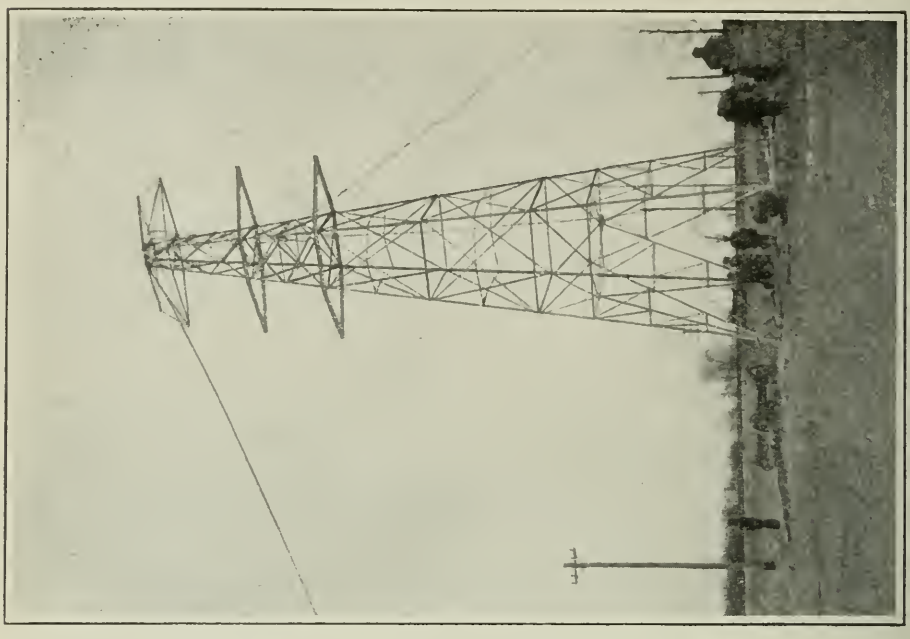
Each of these gangs was in charge of a foreman, who received his instructions from the General Foreman of the telephone line.

Progress of Construction

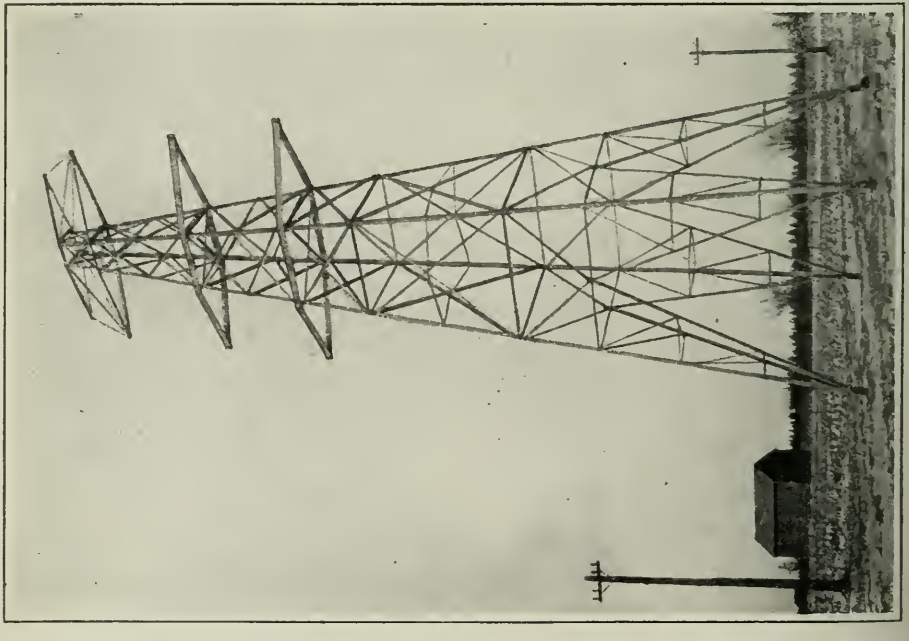
The work of excavating and setting tower footings was begun July 1st, 1913, and was carried forward at such a rate that on Oct. 31st only 76 of the 860 footings remained to be set. The footing gangs met with a good deal of trouble from water in the case of tower footings from Chatham to Tilbury. These were the first set, and the ground was still full of water. Also in the neighborhood of Ridgetown, West Lorne, and Dutton, a good deal of quicksand was found, and shoring of the holes was necessary. In all cases, however, a good solid bottom was reached at the standard depth.

Culverts and bridges were commenced a week ahead of the tower footings and were kept well in advance of this work throughout.

Tower assembling was begun on Oct. 7th and the first tower was erected on Oct. 14th. Up to the end of the month 52 towers had been assembled and erected. During this time considerable trouble was experienced with the bolts supplied to the Commission, and work was hampered thereby. However, bolt trouble was being remedied by the end of the month and the gangs were making better progress.



Tower Erection—Windsor Extension



Standard Line Tower—Windsor Extension

Work on the telephone line was begun early in August, and the first pole erected on August 16th. The digging of holes and erecting of poles was carried forward rapidly, so that this part of the work was practically complete from Chatham to Windsor by Oct. 31st.

On October 6th wire stringing was begun on the telephone line, and a temporary line was strung to the Construction Office of the Commission in Chatham. This was done so that the assembling, erecting, and telephone gangs might be in touch with the Superintendent at all times by telephone.

Thirteen miles of double circuit line had been strung by the end of October.

Work Completed

The construction work completed up to October 31st, 1914, was as follows:—

Transmission Line

Section L. St. Thomas to Chatham.

Footings distributed	430
Holes dug for footings	443
Footings set	410

Section M. Chatham to Walkerville Jct.

Footings completed	373
Towers unloaded	290
" distributed	130
" assembled	52
" erected	52

Telephone Line

Section "L."

Holes dug for poles	85
Poles framed and gained	93

Section "M."

Holes dug	1,825
Poles hauled	1,788
Poles framed and gained	1,788
Poles erected	1,782
Anchors dug	55
Anchors set	55
Brace poles dug	3
Brace poles erected	3
Guys attached	18
Cross arms distributed	902
Cross arms erected	543
Telephone wire strung	13 miles of double circuit.

The surveys for both sections were also completed.

Work Uncompleted

The construction work remaining to be done at the beginning of the fiscal year of 1914 was as follows:—

Transmission Line

Sec. L. St. Thomas to Chatham.

Footings to be distributed	56	
Holes to be dug for footings	43	
Footings to be set	76	
Towers to be unloaded and delivered	486	
Towers to be assembled and erected	486	
Insulators to be delivered and erected	3,375	
Power cable to be delivered and erected	350	wire miles
Ground cable to be delivered and erected	116	" "

Sec. M. Chatham to Walkerville Junction.

Towers to be unloaded	84	
Towers to be delivered	244	
Towers to be assembled and erected	322	
Insulators to be delivered and erected	2,600	
Power cable to be delivered and erected	270	wire miles
Ground cable to be delivered and erected	90	" "

Telephone Line

Sec. L.

Holes to be dug for poles	2,293	
Poles to be framed	2,285	
Poles to be hauled and erected	2,378	
Cross arms to be erected	2,400	
Telephone wire to be strung	232	wire miles

Sec. M.

Holes to be dug for poles	4	
Poles to be framed and hauled	41	
Poles to be erected	47	
Cross arms to be erected	1,300	
Wire to be strung	128	wire miles

TRANSFORMER STATIONS

The major portion of the work performed consisted of the designing and partial construction of Brant, Kent and Essex 110,000 volt transformer stations, as well as of extensions to Niagara Falls, Dundas, Toronto, London, Berlin, Stratford, St. Thomas and Cooksville, 110,000 volt transformer stations.

In addition to the above, distributing stations (4,000 or 2,300 volt secondaries) were or are at present being constructed at Hagersville, Georgetown, Rockwood, Breslau, Elmira, Streetsville and Dorchester in the Niagara System, at Elmvale and Stayner in the Severn District and at Prescott in the St. Lawrence District. Specifications are in course of preparation for distributing stations at Chesterville and Winchester in the St. Lawrence District.

Niagara Falls Transformer Station, 110,000 Volt Arresters and Outdoor Switches

Sub-station equipment has been purchased for the municipalities of Welland, Dundas, Galt, Preston, Berlin, St. Thomas, Paris, Brantford, Milton, Goderich and Clinton.

At Port Arthur an extension was made to the existing station.

In connection with the Wasdell's Falls development, the electrical equipment for the power station was purchased.

The Toronto Storehouse and Laboratory was completed and placed in service and a small storehouse was constructed in the Dundas Transformer station property.

The following is a table giving the capacity of the transformers in different Hydro-Electric Stations at present installed and for which contracts have been awarded. (See Table No. 1.) Table No. 2 gives a list of station transformers purchased during the past year for the municipalities as well as stations of the Commission.

Table No. 1

Transformer Station Capacities

Niagara System	25 Cycle Voltage	Installed Kv-A.	Contracted for Kv-A.	Total Kv-A.	
1. Niagara Transformer Station	12,000-110,000	42,000	10,500	.....	
	12,000- 46,000	.....	21,000	73,500	
2. Dundas Transformer Station	110,000- 13,200	7,500	.....	7,500	
Caledonia Dist. Station	13,200- 2,300	450	.....	450	
Waterdown "	13,200- 2,300	225	.....	225	
Hagersville "	13,200- 2,300	225	.....	225	
3. Toronto Transformer Station	110,000- 13,200	17,500	7,500	25,000	
4. London Transformer Station	110,000- 13,200	5,000	.....	5,000	
Dorchester Dist. Station	13,200- 4,000	.....	75	75	
5. Guelph Transformer Station	110,000- 13,200	3,000	.....	3,000	
Acton Dist. Station	13,200- 2,300	225	.....	225	
Georgetown "	13,200- 4,000	225	.....	225	
Rockwood "	13,200- 2,300	75	.....	75	
6. Preston Transformer Station	110,000- 6,600	3,000	1,500	4,500	
Breslau Dist. Station	6,600- 2,300	225	.....	225	
7. Berlin Transformer Station	110,000- 13,200	3,000	1,500	4,500	
New Hamburg Dist. Station	13,200- 2,200	225	.....	225	
Baden " "	13,200- 2,300	225	.....	225	
Elmira " "	13,200- 4,000	225	.....	225	
8. Stratford Transformer Station	110,000- 13,200	3,000	.....	.....	
	110,000- 26,400	.....	5,000	8,000	
9. St. Mary's Transformer Station	110,000- 13,200	3,000	.....	3,000	
St. Mary's Cement D. S.	13,200- 575	1,500	.....	1,500	
10. Woodstock Transformer Station	110,000- 13,200	3,000	.....	3,000	
Norwich Dist. Station	13,200- 2,300	150	.....	150	
Beachville "	13,200- 2,300	150	.....	150	
11. St. Thomas Transformer Station	110,000- 13,200	3,000	.....	3,000	
Port Stanley Dist. Station	13,200- 2,300	150	.....	150	
12. Cooksville Transformer Station	110,000- 13,200	5,000	.....	5,000	
Mimico Dist. Station	13,200- 2,300	225	.....	225	
Port Credit "	13,200- 2,300	225	.....	225	
Cooksville "	13,200- 2,300	50	.....	50	
Streetsville "	13,200- 4,000	.....	225	225	
13. Brant Transformer Station	110,000- 26,400	.....	5,000	5,000	
14. Kent Transformer Station	110,000- 26,400	.....	5,000	5,000	
15. Essex Transformer Station	110,000- 26,400	.....	10,000	10,000	
					170,075
Severn System	60 Cycle Voltage				
Penetang Dist. Station	22,000- 2,200	400	200	600	
Barrie "	22,000- 2,300	700	.....	700	
Collingwood "	22,000- 2,300	750	.....	750	
Coldwater "	22,000- 2,300	225	.....	225	
Elmvale "	22,000- 2,300	225	.....	225	
Stayner "	22,000- 4,000	300	.....	300	
					2,800
St. Lawrence System					
Prescott Dist. Station	26,400- 2,300	450	.....	450	
					450
Port Arthur System					
Port Arthur Dist. Station	22,000- 2,200	5,250	.....	5,250	
					5,250
Wasdell's Falls System					
Power House	2,300 / 22,000	.....	1,050	1,050	
					1,050
Grand Total					179,625

The capacity of spare transformers is included in the above.

Table No. 2

Station Transformers Purchased

For Municipalities and Commission during fiscal year ending October 31st, 1913

Station	Frequency	Voltage	No.	Capacity	Total Kv-A.
Niagara Falls Transforming Stat.	25	12,000/110,000	3	3,500	10,500
	25	12,000/ 46,000	6	3,500	21,000
Dundas Transforming Station					
Corporation of Dundas	25	13,200/2,300/575	3	150	450
Hagersville Distributing station..	25	13,200/2,300/575	3	75	225
Toronto Transforming Station....	25	110,000/13,200	3	2,500	7,500
Guelph Transforming Station					
Central Prison Farm	25	13,200/2,300/575	3	100	300
Georgetown Distributing Station	25	13,200/2,300/575	3	75	225
Rockwood Distributing Station..	25	13,200/2,300/575	3	25	75
Preston Transforming Station.....					
Corporation of Preston	25	13,200/2,200	3	170	510
Corporation of Galt	25	13,200/2,200	3	150	450
Breslau Distributing Station....	25	13,200/2,200	3	75	225
Berlin Transforming Station.....					
Corporation of Berlin	25	13,200/2,200	3	250	750
Elmira Distributing Station....	25	13,200/2,200	3	75	225
Baden Distributing Station.....	25	13,200/2,200	3	75	225
Stratford Transforming Station ..	25	110,000/26,400	4	1,250	5,000
Corporation of Clinton.....	25	26,400/2,300/575	3	150	450
Corporation of Goderich.....	25	26,400/2,300/575	3	250	750
London Transforming Station.....					
Dorchester Distributing Station.	25	13,200/2,300/575	3	25	75
St. Thomas Transforming Station					
Corporation of St. Thomas.....	25	13,200/2,300/575	3	100	300
" "	25	13,200/2,300/575	3	150	450
Cooksville Transforming Station..					
Corporation of Milton.....	25	13,200/2,300/575	3	250	750
Streetsville Distributing Station	25	13,200/2,300/575	3	75	225
Brant Transforming Station.....	25	110,000/26,400	4	1,250	5,000
Corporation of Brantford	25	26,400/2,300/575 (3-phase)	2	750	1,500
Corporation of Paris	25	26,400/2,300/575	3	200	600
Kent Transforming Station	25	110,000/26,400	4	1,250	5,000
Essex Transforming Station.....	25	110,000/26,400	4	2,500	10,000
Penetanguishene Distributing Stat.	60	22,000/2,200	1	200	200
Elmvale Distributing Station.....	60	22,000/2,300	3	75	225
Stayner Distributing Station	60	22,000/2,300	3	100	300
Wasdell's Falls Power House	60	2,300/22,000	7	150	1,050
Prescott Distributing Station.....	60	26,400/2,300/575	3	100	300
Total.....					74,835

Following is given a general description of the work carried out, divided into the different systems.

Niagara System

Niagara Falls Transformer Station

Fourth Bank of Transformers

In the last report the purchase of the fourth bank of transformers was referred to. This bank was installed and placed in service last spring. In the construction of the station in the year 1909, space was provided for four banks of transformers but at that time only three banks were contracted for. The building is now completely equipped and additional capacity will involve the construction of an extension to the station building.

Switching Equipment

The switching equipment referred to in last report, in connection with the fourth bank of transformers is of more rugged construction than that originally furnished and is more suitable for the service required of it.. The improvements made by the manufacturers are the results of experience obtained by closely following the conditions met on our lines and on similar systems throughout the world. The placing in operation of the 110,000 volt oil switches with resistances previously referred to has improved the service materially. These resistance circuit breakers which are placed outside the building, work in conjunction with breakers inside the building. The two switches are placed in series and when an overload occurs of sufficient magnitude to necessitate opening the circuit, the switch outside the station opens automatically, and in so doing places a resistance between the line and the inside breaker, thereby reducing the load on the oil switch inside the building, which automatically opens the instant following the opening of the breaker outside.

12,000 Volt Feeders

During the summer of the year 1912, a contract was awarded for the supply and installation of a pair of feeder cables for supplying the fourth banks of transformers These cables were installed, tested and placed in service last spring. At the present time there are four feeders in the existing duct line between the station of the Ontario Power Company and that of the Commission; each pair with a capacity equal to that of a transformer bank. When the station was built provision was made for the addition of a spare feeder when required. The contract for the additional cables for this spare feeder was awarded to the Canadian British Insulated Company, their tender being the most advantageous of four received. The oil switch which will be used to connect this feeder to the station bus will be furnished by the Canadian Westinghouse Company. Each pole of the switch will consist of two elements, the opening of one of which will interpose a reactance in series with the feeder before the second element opens the circuit. The action of this circuit breaker is similar to that of the two 110,000 volt line breakers referred to above, but in this case the two switches are constructed as a unit.

Building Extensions

Designs have been prepared and specifications issued covering an addition to present station which will be approximately fifty per cent. larger

than the existing building. The specifications are now in the hands of contractors and tenders will be received shortly. The new building will be sufficiently large to accommodate four banks of transformers of same capacity as those already in service and for stepping up to 110,000 volts with the requisite 12,000 and 110,000 volt switching equipment and switching and protective equipment for two additional 110,000 volt transmission lines. Space will also be provided in this building for four banks of transformers, each bank with a capacity of 10,500 kv-a. for stepping up from 12,000 volts to 46,000 volts for supplying power in the Niagara Peninsula, also for 12,000 and 46,000 volt switching equipment for these transformers and protective equipment for eight 46,000 volt lines. The length of the new building will be approximately the same as that of the present station, the arrangement of the high tension transformers and switching apparatus will be similar to that at present and the 12,000 volt switching equipment for the "high" as well as the "intermediate" tension transformers will be arranged similar to the existing apparatus. When the station is fully equipped there will be a line of possibly forty-two circuit breakers extending over a length of 360 feet. Space will be provided in the 110,000 volt switch-room for the lightning arrester tanks for two additional lines.

The "intermediate" tension transformers will be placed opposite the "high" tension transformers in the extension, across the track runway. The switching for these transformers will be placed on the main floor behind the transformers, whereas the 46,000 volt busses and lightning arresters will occupy a gallery extending over the transformers and oil switches. The 46,000 volt lines will leave the building from the opposite side to the 110,000 volt lines and will be carried on a steel structure around the south end of the building.

In place of individual terminal rooms for 12,000 volt feeders, all cables will terminate in one long room running the entire length of the new building. A basement is to be provided under the entire extension, thereby providing more room for transformer and switch piping than at present. It is intended to place the auxiliary equipment, such as water and oil pumps and oil filters, in the basement beneath the 46,000 volt oil switches.

Additional High Tension Equipment

Specifications were prepared, covering the manufacture and erection of a bank of three 3,500 kv-a. single phase transformers for transforming from 12,000 to 110,000 volts, also 12,000 and 110,000 volt switching equipment for same and switching and protective equipment for two additional 110,000 volt transmission lines, the equipment to be installed in the new station. Tenders were called and the contract awarded to the Canadian Westinghouse Company. The general arrangement of switching for the above equipment will be similar to that in the present building. Both the 12,000 and 110,000 volt busses shall be extended to connect to the busses required for the new equipment. The 12,000 volt feeder switches will be of the reactance type above referred to and the 110,000 volt line oil circuit breakers are to operate on the same principle. Protection for the new 110,000 volt equipment will be provided by two electrolytic arresters placed with the arrester elements inside the station and the horn gaps on steel sructures outside, the leads between the horns and the arrester elements entering the building through porcelain bushings, similar to those used for line wires. The tanks furnished with arresters will be "grounded."

"Intermediate" Tension Equipment

The equipment required for supplying 46,000 volt power which has been contracted for consists of two banks of three 3,500 kv-a. single phase transformers with 12,000 volt primaries and 26,400 volt secondaries; 12,000 volt switching equipment for each bank similar to that provided for "high" tension transformers, that is, feeder switch, bus switch and transformer switch with auxiliary bus, and six 46,000 volt oil circuit breakers, two for transformers and four for lines with electrolytic arrester protection for each line. Specifications describing the above equipment were issued and tenders asked for with the result that a contract was entered into with the Canadian General Electric Company for the transformers, and the Canadian Westinghouse Company for the switching and protective equipment.

The transformers will be connected in delta on the primary side and in star on the secondary side to give a line potential of approximately 46,000 volts.

The feeder switches on the 12,000 volt side and the 46,000 volt line breakers are to be of the reactance type and the arresters furnished will have "grounded" tanks, which is a feature that eliminates one of the dangers to which a station operator is often subjected, unless the apparatus is guarded by a screen or rail.

Dixon Street Conduit

At present all the 12,000 volt feeders are placed in one conduit system. To supply the extension it has been decided to construct an entirely independent duplicate line connecting the Commission's station with that of the Ontario Power Company. At the present time specificaions are being prepared for a duct line on Dixon Street. Tenders will be called for the construction of this line shortly, and contracts awarded so that construction may be well advanced before the coming winter.

Specifications were prepared and tenders asked for the supply and installation of six 300,000 c.m., 3-conductor paper-insulated and lead-covered cables for the new duct line. A contract has just been placed with the Canadian British Insulated Company for these cables. These feeders will be sufficient for supplying the transformers under contract, which were referred to above.

Dundas Transformer Station

Additional Feeders and Transformers

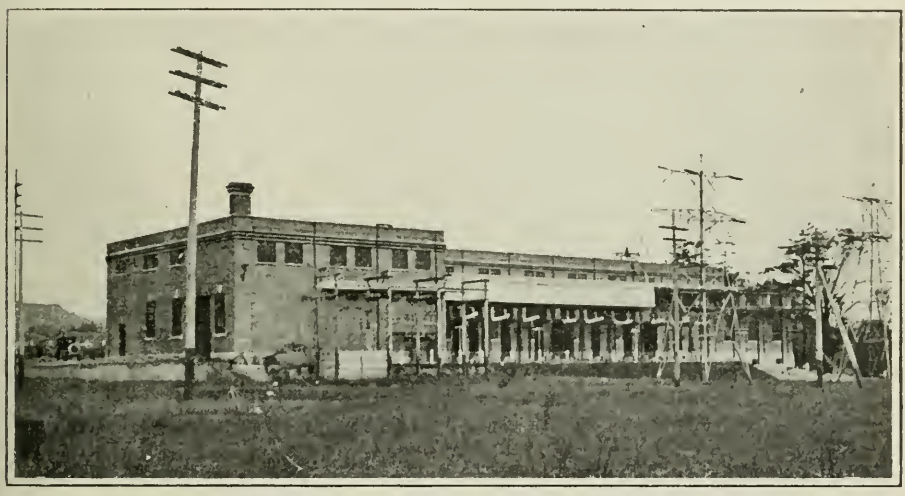
The 13,200 volt feeders, which were referred to in last report as having been contracted for, were installed and placed in service. The station now has six 13,200 volt feeders in operation and supplies Hamilton, Dundas, Waterdown, Dominion Sewer Pipe Company, Caledonia, Crown Gypsum Company, Hagersville, and Hamilton Asylum. The power demand of the City of Hamilton has increased to a sufficient amount to warrant the construction of two additional 13,200 volt lines, and, for the purpose of feeding these new lines, two more station feeder equipments are required. The Canadian Westinghouse Company are at the present time working on the manufacture of two Type "C" oil switches, two electrolytic arresters, with the full complement of disconnecting switches, choke coils and other auxiliary apparatus. The present 13,200 volt bus will be extended for the purpose of providing connection to the new feeders.

The six 1,250 kv-a. General Electric transformers, which were originally installed in Toronto station, but which were replaced last year by transformers

of larger capacity, were installed in Dundas Station, giving a rated installed capacity of 7,500 kv-a. The six 750 kv-a. transformers originally installed at Dundas have been removed and will be used elsewhere on the system.

Building Extensions

In order to provide space for the switching and protective equipment required for the new 110,000 volt line from Dundas to St. Thomas, and for the two contemplated 110,000 volt lines between Niagara Falls and Dundas, it was necessary that an extension be built to the high tension room. This extension is 90 ft. long and is constructed the full width of the present building. A basement has also been provided under one-half of the extension. The construction of the building is being carried out by Messrs. Wells & Gray, Toronto, they having submitted the most advantageous tender. This contract is practically completed



Dundas Transformer Station

110,000 Volt Extensions

The following equipment, to be supplied and installed by the Canadian Westinghouse Company, will be used in conjunction with the new line to St. Thomas and the two new lines from Niagara Falls.

For the new line to St. Thomas will be supplied a 110,000 volt automatic circuit breaker, 110,000 volt disconnecting switches for connecting to each bus, and a set of lightning arresters. The arrester tanks (grounded type) will be placed inside the station and the horn gaps on special structures outside. An oil switch is also being supplied which will be used for connecting the two 110,000 volt busses.

Two sets of circuit breakers, disconnecting switches and lightning arresters will be furnished for the contemplated double circuit line from Niagara Falls.

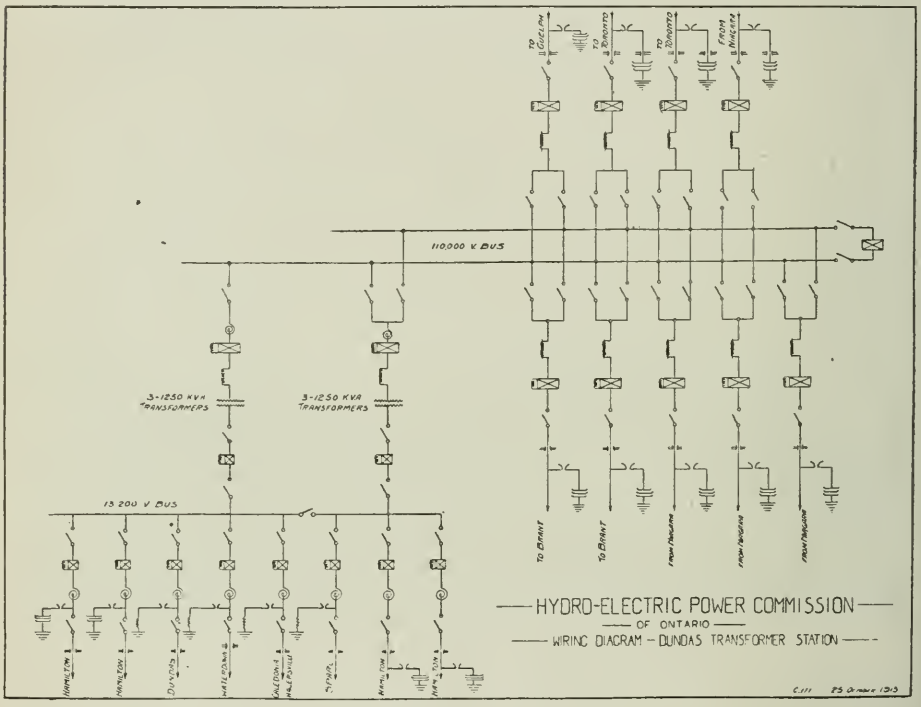
Waterdown Distributing Station

An additional 2,200 volt feeder panel was installed at the station and at the present time an automatic oil switch controls each of the loads, namely, that of the Village of Waterdown and that of the Dominion Sewer Pipe Company.

Hagersville Distributing Station

A standard 13,200/2,300 volt distributing station, housing three 75 kv-a. transformers, was constructed and equipped in the Village of Hagersville. The building was constructed by Mr. George Smith, a local contractor, and the equipment was manufactured and installed by the Canadian Westinghouse Co.

At the present time only one 13,200 volt line enters the station, but the arrangement of equipment is such that at any time, should the load or service require it, an extra line can be brought into the station. At the present time there is one 2,300 volt delta connected feeder for the Village of Hagersville.



Wiring Diagram Dundas Station

Corporation of Dundas

The power demand of Dundas increased to such an extent that the three 75 kv-a. transformers installed in our station were insufficient. Acting under the instructions of the Corporation, tenders were called covering the supply of three 150 kv-a. single phase transformers, 13,200 volts primary, 2,300/575 volts secondary. The tenders when received were tabulated and recommendations sent to the Town with the result that contract was awarded to the Canadian Westinghouse Company. This contract covers the installation of the equipment. The three 75 kv-a. units will be used elsewhere in the system and the Town to be credited with their present value.

City of Hamilton

Designs for a sub-station in the west end of the City of Hamilton were prepared and submitted to the Hamilton Hydro-Electric Department. A site for this station was selected on Dundurn Street near Hunt Street. This station was designed to provide for four incoming 13,200 volt overhead lines from the

Commission's Dundas transformer station and for five outgoing overhead 13,200 volt feeders, one being the Asylum feeder, and for six underground 13,200 volt feeders, also for two banks of transformers, each consisting of three 400 kv-a. 13,200/2,300/575 volt single phase, self-cooled transformers. The 13,200 volt feeders are designed to feed other sub-stations in the city. Provision was also made in the design for a number of 2,300 volt feeders to supply the western part of the city.

Designs for a central sub-station on Hughson Street were submitted to us by the Hamilton Hydro-Electric Department and were discussed and commented upon.

Toronto Transformer Station

Seven 2500 Kv-A. Transformers

The seven 2,500 kv-a. transformers which were referred to in the last report as having been purchased from the Canadian General Electric Company, were installed and placed in service in the early winter. The installed capacity of this station is now 15,000 kv-a. and a spare unit is provided which may be used in case of emergency. The six 1,250 kv-a. single phase transformers originally installed in this station have been transferred to Dundas transformer station.

Building Extension

Designs were prepared for a building extension to the Toronto station sufficiently large to accommodate three additional banks of transformers, also the equipment which the Toronto Hydro-Electric System will require for supplying low voltage power in the vicinity of the transformer station. Specifications for this building were drawn up and tenders asked with a result that Messrs. Wichall & Son of Toronto were awarded the contract. At the present time the walls are about three-quarters completed. The steel work is delivered at the site. It is expected that the building will be completely enclosed before the winter weather sets in.

Additional Capacity

The Canadian General Electric Company has been awarded the contract for the supply and installation of three 2,500 kv-a. single phase transformers, these to go into the new portion of the building. The contract also covers one 110,000 volt oil switch, disconnecting switches and extension to the present bus for connecting the new equipment. This contract also includes the necessary 13,200 volt switching equipment for the bank of transformers, also an additional switchboard panel. It is expected this equipment will be completely installed and in operation next spring.

City of Toronto

A portion of the Toronto Transformer station is occupied by equipment, the property of the Toronto Hydro-Electric System, and as it was the intention of this System to install a considerable amount of transforming and switching apparatus in the new portion of the building, the layout of the station extension was made wih due regard to the housing of same.

London Transformer Station

Building Extension

In order to house the switching equipment required in connection with the new 110,000 volt line from Dundas to St. Thomas, it was necessary to construct an extension to the high tension portion of the London transformer station. Designs were prepared and tenders called for the construction of this building with a result that Messrs. Hyatt Bros., of London, were awarded the contract. The main walls are now practically completed and the structural steel work is in place. We expect this building will be completely housed in the course of a month.

110,000 Volt Extension

The equipment required for this station for the operation of the new 110,000 volt line consists of one automatic 110,000 volt oil circuit breaker for connecting London station to the new line from Woodstock and a similar breaker for connecting the new line to St. Thomas. With these new circuit breakers are required a certain amount of bus bar, connecting material and a number of disconnecting switches. 110,000 volt lightning arresters are also required, one each for protecting the new line from Woodstock and the new line from St. Thomas. The Canadian Westinghouse is under contract to supply and install all this equipment.

Dorchester Distributing Station

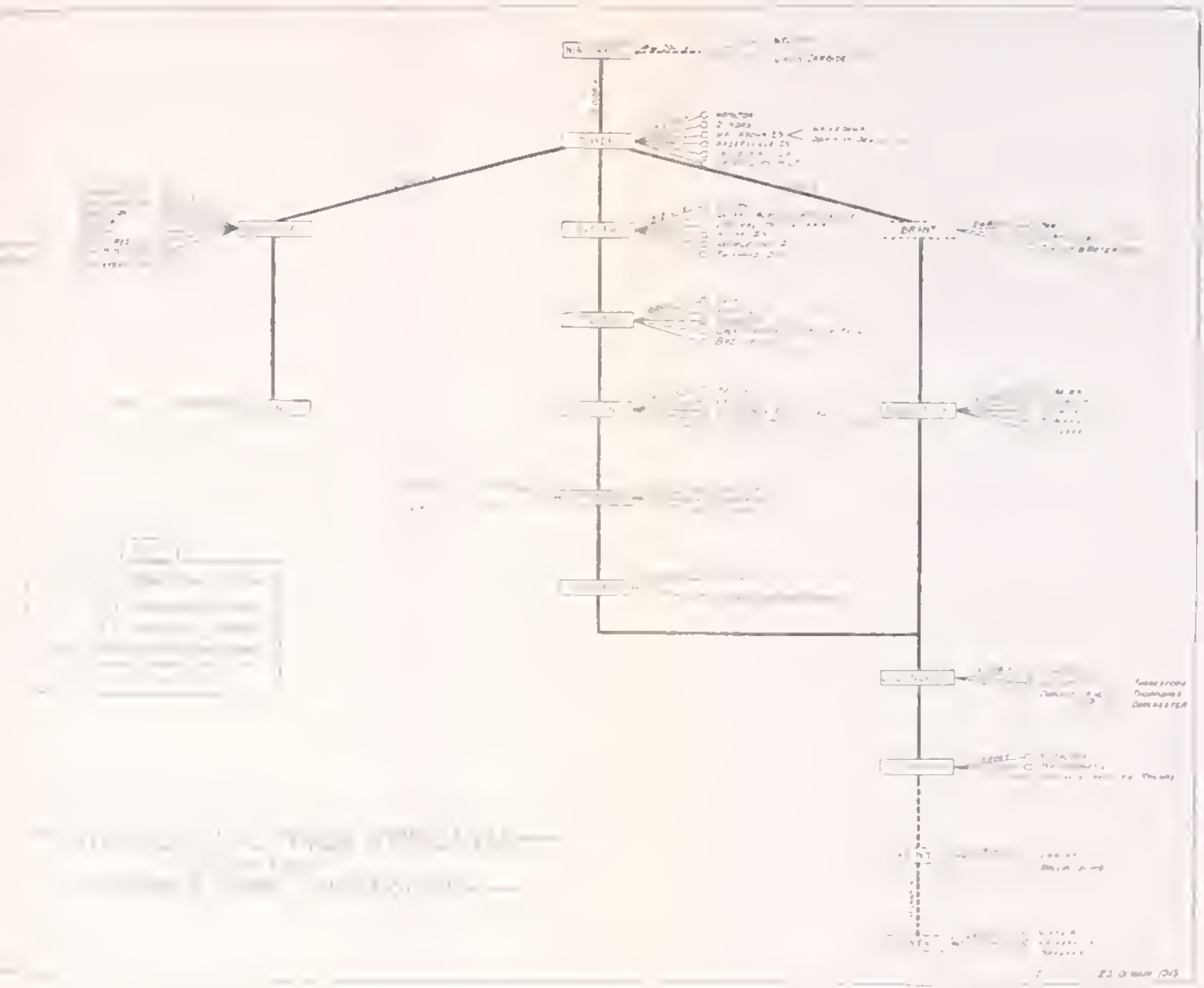
Work has been started in connection with the construction of the distributing station at Dorchester, similar to the outdoor station at Rockwood. The Canadian Maloney Company have contracted to supply three 25 kv-a. single phase outdoor type transformers. This station will be used for supplying power to Dorchester, Thamesford, and Thorndale.

Guelph Transformer Station

No additions have been made to this transformer station during the past year. However, it is intended to install in the station the four 750 kv-a. transformers which were removed from Dundas and to transfer the four present transformers, two to Preston Transformer Station and two to Berlin Transformer Station, thereby doubling the capacity of each of the two latter stations. This change will increase the capacity of Guelph station, as the four transformers originally placed in Dundas have a capacity in excess of their rating.

Central Prison Farm

Recommendations were made to the Provincial Secretary for the purchase of equipment required for the construction of a sub-station at the Central Prison Farm for receiving Hydro-Electric power, with a result that three 100 kv-a. single phase transformers were purchased from the Canadian Crocker Wheeler Company and switching and protective equipment from Messrs. Chapman and Walker. The installation of the transformers and other equipment was carried out by the Hydro-Electric construction staff. The building in which this equipment is installed is of a temporary nature, it being the intention of the Provincial Secretary to construct a permanent power house at a later date and at that time the transforming equipment will be installed in the new building along with other equipment which may be found necessary.



Acton Distributing Station

The station in the Village of Acton which was referred to in the last report was completed and placed in service the early part of the winter.

Village of Acton

A constant current transformer was purchased for the Village of Acton for use on their street lighting system. This transformer was installed in the Acton Distributing Station.

Georgetown Distributing Station

A standard distributing station equipped with three 75 kv-a. transformers was constructed in Georgetown on a site provided by the Town adjoining the town hall. The contract for the building was awarded to J. MacKenzie, a local contractor. At the present time only one 13,200 volt line enters this station, but the arrangement is such that a second line can be added when required. The secondary portion of this building is equipped with two panels, one for power and one for lighting. The secondary voltage of this station is 4,000 volts "Y" connected. The three 75 kv-a. transformers and switching equipment were supplied and installed by the Canadian Westinghouse Company.

Rockwood Distributing Station

A pole type sub-station was constructed in the Village of Rockwood, three 25 kv-a. outdoor type, single phase, Canadian General Electric transformers were mounted on a platform supported by wooden poles. They are connected to the line through horn gap disconnecting switches and 13,200 volt fuses. This is the first outdoor 13,200 volt transformer station on the system.

Preston Transformer Station

Breslau Distributing Station

A standard distribution station was constructed in the Village of Breslau on the property of the Breslau Brick Company. Messrs. Stagg and Erb, of Berlin, Masonry contractors, constructed the building, and the equipment which was similar to that of Georgetown Distributing Station was supplied and installed by the Canadian Westinghouse Company.

Town of Preston

Specifications were prepared and issued and tenders received covering an additional bank of three 170 kv-a., single phase, 6,600/13,200-2,200/550 volt, 25 cycle, self-cooled transformers for the Preston Municipal Station, also switching equipment for same, including connections to former bank, and for one outgoing line to Doon. This equipment was purchased from the Canadian General Electric Company and was installed for the Town of Preston by the Commission and placed in service August, 1913. In order to install the new equipment in the available space, it was found necessary to rearrange the wiring of the former installation.

Town of Galt

The switching equipment purchased for the Corporation, which was referred to in the last report, was installed and placed in service early in the year.

The local Commission was assisted in the purchase of three 150 kv-a., 6,600/2,200 volt, single phase transformers, which will be installed in the main sub-station of the Corporation. With these transformers in service the main station capacity will be double what it was originally.

The pumping equipment referred to in last report as having been purchased, was installed and placed in service.

Berlin Transformer Station

Neutral Grounding Device

Water resistance for grounding the High Tension neutral of the transformer bank was installed similar to that in use at Niagara Falls, Toronto and St. Thomas.

Building Extension

Drawings were prepared covering an extension to the Berlin station of sufficient size to house an additional bank of three 750 kv-a. single phase transformers. The spare transformer already at this station will be used for one of three required for the second bank, whereas the other two transformers will be obtained from Guelph Transformer station. Tenders were called for the construction of the building and the contract awarded to Mr. Casper Braun, of Berlin.

110,000 Volt Extension

The Canadian General Electric Company was awarded the contract for the supply and installation of an additional 110,000 volt transformer oil switch with necessary disconnecting switches and extensions to the present bus for connecting to the new transformer switch. Their contract also covers one 13,200 volt transformer oil switch and two 13,200 volt feeder equipments, consisting of oil switch, electrolytic lightning arresters, switchboard panels and meters.

City of Berlin

Specifications were prepared and tenders received covering the supply and installation of three 250 kv-a. 13,200-2,300/575 volt, single phase, self-cooled transformers and 13,200 volt switching equipment for same and for one incoming line for the Berlin Light Commission for a sub-station at the plant of the Dominion Tire Company, in Berlin. In connection with this work, the drawings of the building which was built by the Dominion Tire Company were commented on and approved by us. The contract for the transformers and other equipment outlined above was awarded by the Corporation, on the Commission's recommendation, to the Canadian General Electric Company.

Baden Distributing Station

The power demand on this station increased at such a rate that the transformers originally installed in this station, namely three 20 kv-a. units, were insufficient to take care of the demand, with a result that three 75 kv-a. transformers were purchased from the Packard Electric Company and installed in this station. The construction work involved in making the change was performed by the Commission's construction force.

New Hamburg Distributing Station

As the Commission has established the practice of purchasing the necessary equipment in stations, supplying power to villages, arrangements were made

whereby the Commission took over the equipment originally purchased by the Village of New Hamburg and installed in the local station. This station is equipped with three 75 kv-a. Packard transformers stepping down from 13,200 to 2,200 volts.

Elmira Distributing Station

A standard distributing station was constructed at Elmira on a lot adjoining the local municipal station. J. E. Bowman, a local contractor, constructed the building. The transformers, which are rated at 75 kv-a., 13,200/2,300 were supplied and installed by the Canadian Westinghouse Company, whereas the 13,200, and 4,000 volt switching equipment will be supplied by the Canadian General Electric Company.

Stratford Transformer Station

Building Extension

Drawings were prepared covering an extension to Stratford station of sufficient size to accommodate one bank of three 1,250 kv-a. transformers stepping down from 110,000 volts to 26,400 volts, also a spare transformer unit. The extension will also be required to accommodate one 110,000 volt transformer oil switch, 26,400 volt transformer oil switches, and equipment for four 26,400 volt feeders. Specifications have been issued and tenders requested for the construction of this building. Construction work will be started before the coming winter.

110,000 Volt Extension

The Canadian Westinghouse Company is under contract to supply and install the four 1,250 kv-a. single phase, water cooled transformers stepping down from 110,000 volts to 26,400, whereas the Canadian General Electric Company are under contract to supply and install the 110,000 volt oil switch required for the transformers, also disconnecting switches and extension to the present high tension bus. The latter firm will also supply a 26,400 volt transformer oil switch, 26,400 volt bus bars, four feeder switches, four electrolytic lightning arresters and the necessary switchboard and apparatus. Provision will be made in this station whereby 13,200 volt power can be obtained from the new bank of transformers for supplying the stations equipped for receiving 13,200 volt power should any trouble occur to the transformers at present in service.

Town of Goderich

Specifications for electrical equipment for the Goderich Municipal Station were prepared and tenders received and a recommendation submitted to the Corporation of Goderich. The contract was awarded to the Canadian General Electric Company for the following equipment:—

One bank of three 250 kv-a., 25 cycle, single phase self-cooled 26,400/13,200-2,300/575 volt transformers.

One 3 phase regulator switch connected to the secondary taps of above transformers to regulate voltage from 2,200 volts to 2,500 volts in 100 volt steps.

Two 15 kw. 6.6 amp., 25 cycle constant current transformers.

Switching equipment for one incoming 26,400 volt incoming line; the above transformers; one 600 kv-a. power feeder; one 250 kv-a. 3 phase lighting feeder; and two series lighting feeders.

The above equipment is to be installed in the building at present housing the Corporation power generating equipment, the necessary alterations being made thereto in accordance with the Commission's plans.

For the Corporation, specifications were also prepared for the purchase of a domestic pump and a fire pump having respectively a capacity of 700 Imperial gallons per minute against 340 foot total head, and of 1,450 Imperial gallons per minute against 480 foot total head, both pumps being directly connected to a synchronous motor suitable for power factor correction purposes. The specifications covered friction clutches, piping, switchboard and all accessories. Tenders have been received but no contract has been awarded pending further investigation and study. It is the intention to place these pumps in a room adjoining the room in which the main transformers and switchboard will be located.

Goderich Metering Equipment

Equipment, consisting of a recording wattmeter and a recording power factor meter, was purchased for metering load conditions at Goderich. This equipment is being supplied by the Canadian General Electric Company and will be installed at Goderich Municipal Station at the time this Company is installing the equipment for the Corporation. The meters will be connected on the secondary side of the transformers.

Town of Clinton

Specifications were prepared for sub-station equipment for the Town of Clinton and tenders received and a recommendation submitted to the Corporation. The contract was awarded to the Canadian General Electric Company for equipment consisting of:—

Three 150 kv-a., 26,400/13,200-2,300/575 volt, 25 cycle self cooled transformers.

Switching equipment for above and for two incoming 26,400 volt lines, and for one 300 kv-a. power feeder and one 150 kv-a. lighting feeder.

This equipment is due for shipment in December, 1913, and will be in service early in 1914. It will be installed by the Canadian General Electric Company in the building at present housing the producer gas plant, in Clinton.

Specifications have also been prepared and tenders have been received for one 150 kv-a., 750 r.p.m., 2,300 volt, 25 cycle, three phase, belted type synchronous motor with panels and connecting material. It is proposed to install this motor in the present power house and use it to drive a line shaft and also for power factor correction purposes.

Clinton Metering Panel

Equipment, consisting of a recording wattmeter and a recording power factor meter, was purchased for metering load conditions at Clinton. This equipment is being supplied by the Canadian General Electric Company and will be installed at Clinton Municipal Station at the time this Company is installing the equipment for the Corporation. The meters will be connected on the secondary side of the transformers.

Woodstock Transformer Station

The only construction work in Woodstock transformer station undertaken during the present year consisted of the installation of wiring and conduit for a 2,200 volt feeder supplying the West Oxford Rural Line. Power is obtained from the transformers in the station belonging to the Corporation of Woodstock.

St. Thomas Transformer Station

Construction work in connection with the installation of the 13,000 volt oil switch with panels, meters and auxiliary equipment for the line to the London and Lake Erie Railway and Transportation Co., was completed and placed in service.

Building Extension

In order to accommodate the switching equipment required in the new 110,000 volt single circuit from London, and also for the new double circuit line being constructed to Windsor, it is necessary to construct a 32 foot extension to the high tension portion of the building. The necessary designs and specifications were prepared. Tenders were called for the construction of this building and contract awarded to George Ponsford, a local contractor. The main building walls are about three-quarters completed and some of the steel work is already erected. The building will be completely enclosed before the cold weather sets in.

110,000 Volt Extension

The equipment required for this station for the operation of the new 110,000 volt lines consists of one automatic 110,000 volt oil circuit breaker for connecting St. Thomas station to the new line from London, two similar breakers for connecting the new double circuit line to Kent station (Chatham), also one transformer bank automatic oil circuit breaker. With these new circuit breakers is required a certain amount of bus bars and connecting material, also a number of disconnecting switches. 110.000 volt lightning arresters are also required, one each for protecting the new lines to Kent station and the new line from London station. The arrester tanks are grounded type and will be located inside the station and the Horn Gaps on steel structures outside. The Canadian Westinghouse is under contract to supply and install all this equipment.

City of St. Thomas

Designs and specifications for a sub-station in the southern part of the City of St. Thomas were prepared for the St. Thomas Light and Power Department. Tenders were received for the electrical equipment, and recommendations were submitted to the Department. Contract was awarded to the Packard Electric Company for three 150 kv-a., 13,200-2,300/575 volt, oil insulated, self-cooled transformers: to the Siemens Company, of Canada, for one three phase, 13,200 volt oil immersed, resistance type lightning arrester: and to the Canadian General Electric Company for switching equipment for the above transformers and for one incoming 13,200 volt line, one 450 kv-a. 2,300 volt power feeder, and one 100 kv-a. three phase 2,300 volt lighting feeder.

Tests on the transformers were witnessed by one of the Commission's Engineers and two of the transformers have been shipped. The arresters have been shipped and the switching equipment will be shipped in November.

The building was erected by the Corporation and the station will distribute power and lighting to customers in the vicinity.

Cooksville Transformer Station

13,200 Volt Extension

This station was originally equipped with only four 13,200 volt feeders; however, the demand on this station has been such that it is necessary to double the number. A contract has been awarded to the Canadian Westinghouse Company for the supply and installation for four 13,200 volt feeder equipment, each consisting of an automatic oil switch, an electrolytic arrester (grounded tank type), disconnecting switches, choke coils, switchboard panel and full complement of indicating and recording meters. The construction of the necessary cell work is well advanced and the Canadian Westinghouse Company has started installation of the equipment which will be completely installed by the coming winter.

Mimico (New Toronto) Distributing Station

The installation of equipment in the station was completed and the station placed in service early in the year. The apparatus in this station is protected on the 13,200 volt side with an arrester developed by the Commission, the arrester being of the horn gap and oil cooled resistance type. The 2,300 volt feeders run to the Village of Mimico and to the Mimico Asylum for the Insane.

Port Credit Distributing Station

The installation of equipment was completed and the station placed in service early in the year. The Village of Port Credit, and Toronto Township, County of Peel, are served from this station.

Mimico Hospital for Insane

At the request of the Department of Public Works, specifications were prepared and tenders received for electrical equipment for the Mimico Hospital for Insane. Recommendations were submitted to the Department and contracts were awarded to the Canadian General Electric Company for three 25 kv-a., one 7½ kv-a. and one 1 kv-a. single phase, 2,200-220/110 volt, 25 cycle, transformers; and to the Northern Electric and Manufacturing Company for a six panel distributing switchboard. The switchboard provides for one incoming 2,300 volt line, one bank of three 25 kv-a. transformers, one 2,300 volt feeder to the pump house, one 2,300 volt feeder to the Asylum farm, two 30 kw. d.c. 115 volt generators (previously installed), three 220 volt, 3 phase, power feeders; eight 110 volt single phase lighting feeders, two 220/110 volt single phase ground lighting feeders. The lighting feeders are so arranged that they may be connected either to the transformers or to the direct current generators.

The switchboard is being erected in present generator room at the asylum, and the three 25 kv-a. transformers are erected on a two pole structure outside the building. The 7½ kv-a. and the 1 kv-a. transformers are for lighting of the Assembly Hall and the pump house respectively. A turbine fire pump direct connected to an induction motor has been installed by the Department in the Asylum and a turbine pump for domestic service is about to be installed. Three 5 kv-a., 2,200/220/110 volt transformers have been purchased from the Packard Electric Company for operating the domestic pump motor.

Mimico Asylum Farm

At the Asylum farm situated approximately one and a half miles north of the Asylum, a brick plant has been erected by the Provincial Secretary. The Commission, at the request of the Public Works Department, have built a 2,300

volt feeder from the Asylum to the farm and, at the request of the Provincial Secretary's Department, called for tenders on one 100 h.p. and one 75 h.p., 3 phase, 750 r.p.m., 550 volt, 25 cycle induction motor, also three 50 kv-a., 2,200-550 volt, 25 cycle outdoor type transformers. Recommendations were submitted to the Assistant Provincial Secretary and contracts were awarded to the Canadian Crocker Wheeler Company for the motors and to the Packard Electric Company for the transformers. One 5 kv-a. and one 3 kv-a. 2,200-220/110 volt transformers were also purchased from the Canadian Crocker Wheeler Company for use in lighting the buildings at the brickyard plant. The above motors and transformers with wiring were installed by the Commission for the Department and were placed in service in September.

Corporation of Milton

As stated in previous report, recommendations were made to the Corporation regarding purchase of sub-station equipment. The Town approved the recommendations made, with the result that contracts were drawn up with the Canadian General Electric Company for three 250 kv-a. single phase, oil insulated, self cooled single phase transformers for stepping down from 13,200 to 2,300 volts, and with the Siemens Company, of Canada, for the requisite switching and protective equipment. The Town's equipment was installed in the power house of a local manufacturer. The equipment has been in service for several months.

Milton Metering Panel

A recording wattmeter and a recording power factor meter with the requisite current and potential transformers for metering at 13,200 volts was purchased by the Commission from the Siemens Company, of Canada, for metering the Milton load. This equipment was installed by the Siemens Company when installing the Corporation's equipment.

Streetsville Distributing Station

A standard 13,200 volt distributing station was built at Streetsville on the property of the village. Three 75 kv-a. transformers were purchased from the Canadian General Electric Company for this station. They will be installed by the Commission. The switching equipment has been ordered from the Canadian Westinghouse Company. The installation of switching equipment is now in progress by the Westinghouse Company. The distribution voltage from the station is 4,000, star connected with the neutral grounded. The building was constructed by a local contractor, Joseph P. Lair.

Brant Transformer Station

This station is being constructed between the City of Brantford and Paris, and will be used to serve both municipalities as well as any other Corporation in the vicinity who contract with the Commission for a supply of power. The secondary voltage of this station being 26,400, it will be possible to distribute power as far south as the Town of Simcoe. It is expected to place this station in service about the end of the present calendar year.

Building

Last November, specifications were prepared and tenders requested for the construction of the sub-structure necessary for this transformer station, with the result that Messrs. Bennett and Bowden were awarded the contract on the understanding that work would be expeditiously carried out to ensure completion before the winter. During the winter specifications covering the superstructure were prepared and separate tenders called for, one covering the supply and erection of the structural steel work and the other the masonry, concrete and general fittings, such as doors, glazing and painting. John Hayman and Sons, of London, were awarded the contract for the masonry work and the Standard Steel Construction Company for the structural steel work. The structural steel contract was completed some time since, whereas John Hayman and Sons expect to complete their contract in the course of two or three weeks.

Electrical Equipment

The arrangement of this building is such that the existing line between Dundas and Woodstock, being cut at the station, will enter the building and pass through an oil circuit breaker on to the bus and then will pass out through a circuit breaker on to the line, both the incoming and outgoing lines being provided with electrolytic arresters. The transforming equipment for this station is to consist of four 1,250 kv-a. single phase, oil insulated transformers, three of which will be connected in the bank in star on the high tension side and in delta on the low tension side, the fourth transformer being connected to an emergency bus as a spare unit.

The arrangement of the 110,000 volt equipment is in general the same as that in the Cooksville (Port Credit) Transformer station, with the exception that at Brant the lighning arrester tanks will be placed inside the building. There will be six 26,400 volt feeders, each protected with an electrolytic arrester of the grounded tank type. The Canadian Westinghouse Company has the contract for the supply and installation of the entire electrical equipment for this station.

This station will be the first one in the system with a distribution voltage of 26,400. On account of this higher secondary voltage, a new arrangement of equipment was required. In Brant station there will be two galleries in the 26,400 volt portion. The lower gallery will accommodate the feeder and transformer switches, also the bus bars and current transformers. The upper gallery will accommodate the electrolytic lightning arresters. The space below the gallery will be completely enclosed and in this space shall be the switchboard. In this station no provision is being made for the heating of the building by steam, it being the intention to heat the building electrically, distributing 10 kw. electric radiators sufficient to maintain the temperature from 65 deg. fahr. in the operating room to 50 deg. fahr. in the balance of the building under the worst weather conditions likely to be encountered. During the peak the radiators will be cut off.

Mechanical Equipment

A 45-ton crane with electric and hand hoist and a transformer truck for this station are being manufactured by H. J. Armstrong, of Markdale. The oil storage tanks were furnished by Goldie and McCulloch, of Galt, and the transformer circulating water pumps are being supplied by the Storey Pump and

Equipment Company, Toronto. A well was dug in the basement of the station, which will supply sufficient water for replenishing the sprinkling tank which will be constructed in the rear of the station.

City of Brantford

The City of Brantford Hydro-Electric Department submitted building drawings and a proposed wiring diagram for a municipal station in Brantford, and requested the Commission to prepare electrical designs and specifications and award contracts for the necessary equipment. Tenders were received and a recommendation made to the Corporation. Contracts were awarded to the Canadian Crocker Wheeler Company for two 750 kv-a. 26,400-13,200/4,000-2,300 volt, 25 cycle, water cooled, three phase transformers; and to the Canadian General Electric Company for switching and protective equipment for the above transformers; two incoming 26,400 volt lines, three 4,000/2,300 volt 4 wire, three phase lighting feeders, three 4,000/2,300 volt, 4 wire, three phase power feeders, and one 4,000/2,300 volt, 4 wire, three phase feeder to the constant current street lighting transformers. In each case the contract covers the supply and installation of the equipment. This system will provide for general distribution for power and lighting in the City of Brantford.

Town of Paris

Specifications were prepared and tenders received covering the supply and installation of electrical equipment for a municipal station in the Town of Paris. A recommendation was submitted to the Corporation and the contract was awarded to the Canadian General Electric Company for equipment as follows:—Three 200 kv-a., 26,400-13,200/2,200-575 volt, 25 cycle, oil insulated, self cooled transformers: Three 15 kw., 6.6 amp., 25 cycle constant current transformers: Switching equipment for the above and for two incoming 26,400 volt lines; one 600 kv-a., 2,300 volt power feeder; three 150 kv-a., 2,300 volt three phase lighting feeders; and three series street lighting feeders.

This equipment will be installed in the existing power house, the alterations to which are being made by the Corporation in accordance with the Commission's drawings.

Kent Transformer Station

This is the station which is being constructed near the City of Chatham and will be used to serve the City of Chatham as well as any other municipality within a range of sixty miles or so which enters into a contract with the Commission for the supply of power.

Building

Designs were prepared and specifications gotten up covering the construction of the building necessary to house the electrical apparatus mentioned below with the result that the contract was awarded to H. G. Christman & Co., of Hamilton. Excavation work was started during the latter part of September, but the Contractor promises to have the building completed by the middle of January next.

Electrical Equipment

The arrangement at this station is such that both the 110,000 volt lines from St. Thomas shall enter the station and be connected with the main bus by automatic oil circuit breakers. Two outgoing lines to Essex Station (near Windsor) will also be provided with similar breakers. Both the two incoming

and two outgoing high tension lines will be protected by electrolytic arresters. The transformers which are being manufactured for this station will have a capacity of 1,250 kv-a. There are four transformers ordered—three of these will be connected in star on the high tension side and in delta on the low tension side. The fourth transformer shall be reserved as a spare. There will also be six 26,400 volt feeder equipments provided, these being protected by electrolytic arresters.

Essex Transformer Station

This station is being erected at Walkerville Junction, and will be used to serve Walkerville, Windsor, Sandwich and surrounding municipalities.

Electrical Equipment

This station is at the end of the 110,000 volt line and will be arranged so that both the 110,000 volt lines from Kent Transformer station will enter the building and pass through automatic oil circuit breakers to the bus bars, these lines being protected by electrolytic arresters. The transforming equipment is to consist of four 2,500 kv-a. single phase, oil insulated water cooled transformers, three being connected in a bank in star on the high tension side and in delta on the secondary side to give a distributing potential of 26,400. Six 26,400 volt feeder equipments will be installed. The entire electrical equipment is being manufactured by the Canadian Westinghouse Company. They guarantee to completely install same and have it ready for service by March 1st, 1914.

Building

Plans and specifications were prepared covering the necessary building for housing the above equipment. Tenders were called with the result that the contract was awarded to H. G. Christman & Co. of Hamilton. Excavation work has just recently been started, but the Contractor promises to have the building completed by the middle of January.

Severn (Simcoe) System

Penetanguishene Distributing Station

Owing to the increasing demand for power from this station it was decided to increase the capacity. A contract was entered into with the Canadian Crocker Wheeler Company for a 200 kv-a., single phase, 60 cycle, 2,300 volt transformer with characteristics similar to those of the transformers originally supplied. This transformer has been installed and the present station capacity is 600 kv-a.

Barrie Distributing Station

The apparatus referred to in last report as having been purchased was installed in the existing power station belonging to the Corporation, and placed in service. There are two 350 kv-a. transformers in this station connected for 2,300 volts 2 phase.

The potential regulators and feeder panels referred to in 1912 report were delivered and turned over to the Corporation who in turn arranged with the Canadian General Electric Company for its installation. The equipment was placed in service in the spring of 1913.

Collingwood Distributing Station

The station in this town has been completed and placed in service. It has a capacity of 750 kv-a., while the secondary distribution system operates at 2,300 volts three phase.

Corporation of Collingwood

The contract for equipment for Collingwood Station referred to previously, included constant current transformers for the street lighting and power and feeder panels, for the Corporation, as well as automatic three phase potential regulators. This equipment has all been placed in service and turned over to the municipality.

Coldwater Distributing Station

This station was completed and placed in service.

Elmvale Distributing Station

The Canadian Westinghouse Company was awarded the contract for the transformers and switching equipment which consisted of three 75 kv-a. single phase transformers, switching equipment for one 22,000 volt incoming line and one 2,300 volt outgoing feeder. Siemens Company of Canada supplied the 22,000 volt protective equipment. The building was constructed by L. H. Spring, a local contractor. This station is practically the same as that at Coldwater and was placed in service several months ago.

Stayner Distributing Station

The Canadian Westinghouse Company supplied equipment for this station similar to that provided for Elmvale, with the exception that the transformers are rated at 100 kv-a. Siemens lightning arresters and choke coils were provided for 22,000 volt protection. The building was constructed by H. G. Wynes, a Collingwood contractor, on a site provided by the municipality. The distribution voltage from Stayner station is 4,000 three phase, star connected, with neutral grounded.

Wasdell's Falls Generating Station

Specifications were issued in May covering complete electrical equipment for the development at Wasdell's Falls on the Severn River. After due consideration of the tenders which were received the contract for the generators and exciters was awarded to the Swedish General Electric Co., through their agents Messrs. Kilmer, Pullen and Burnham. The contract for the transformers and the complete switching equipment was awarded to the Canadian Westinghouse Co.

A description of the electrical equipment which has been contracted for and the installation is given below.

There will be two vertical type 400 kv-a., 3 phase, 60 cycle, 2,300 volt, 90 r.p.m. generators, each direct connected through a flexible coupling with a water wheel and each provided with a ball thrust bearing at the top of the generator frame. This bearing will carry only the weight of the generator rotating parts. These generators have a 25 per cent. overload guarantee and are also guaranteed to withstand a test of 180 per cent. of normal speed for fifteen minutes with full excitation, also a short circuit at the terminals for one minute with the same excitation without injury to any part.

Two compound wound, 125 volt, exciters will be provided, one being turbine driven and the other motor driven. The turbine driven exciter is rated at 20 k.w., 190 r.p.m. and is capable of exciting both generators. The motor driven exciter is rated at 30 k.w., 1,200 r.p.m. and is on same base with and direct connected to a 45 h.p., 3 phase, 60 cycle, 220 volt squirrel cage induction motor. Both exciters are being designed to be suitable for use with a Tirrill voltage regulator.

There will be two banks of transformers, each consisting of three 150 kv-a. single phase, self cooled, oil insulated transformers with high tension voltages of 22,000, 23,000, 24,000 and 25,000 volts and with low tension voltages of 2,300, 2,200, 2,100, 2,000 and 1,900 volts. A spare transformer is also being supplied.

Standard 13,200 Volt Entrance Hoods

In addition to above transformers there will be three 15 kv-a., 2,300/220-110 volt, single phase service transformers for use in supplying motor for driving exciter and for station lighting.

The switchboard will consist of seven panels of black slate, there being two generator panels, two exciter panels, one station service panel and two combined transformer and outgoing line panels. The 2,300 volt bus bars and oil switches will be mounted on a separate framework, a short distance behind the panels. The two outgoing high tension transmission lines will be controlled by Westinghouse automatic Type "E" 25,000 volt oil switches in the gallery, operated from the switchboard on main floor. There will be an aluminum cell lightning arrester installed for each of the two lines.

The scheme of connections is such that the station may be operated in two parts if required, since each bus is divided by disconnecting switches into two sections with one exciter, one generator, one bank of transformers and one transmission line on each section.

Port Arthur System

Port Arthur Station

Station Extension

Drawings were prepared covering an extension to the north end of the existing station, the additional section having sufficient space to accommodate a bank of transformers, two 22,000 volt lines, a 750 kv-a. motor generator and additional 2,200 volt and 600 volt feeder equipments. The contract for the building extension was placed with Messrs. Siemen and Penniman, a local contracting firm. The building was completed some time ago.

Siemens Company, of Canada, entered into a contract to supply and install switching, protective and metering equipment for the two main 22,000 volt lines which will be used for supplying power to the Dominion Grain Commission Elevator and to the contemplated Municipal pumping station at the north end of the city. The installation of this equipment has been commenced and should be completed in the course of a month or so.

Corporation of Port Arthur

Tenders were asked of the different electrical manufacturers covering transformers and switching equipment for two local sub-stations. The tenders on receipt were tabulated and sent to Port Arthur with recommendations. Apparatus required by the Corporation was ordered direct from the manufacturers.

St. Lawrence System

Prescott Distributing Station

A standard 26,400 volt distributing station was constructed at Prescott on a lot adjoining the existing Municipal power station. The building, which is similar to that at Stayner, was constructed by H. G. Wynes, of Collingwood. The electrical equipment, consisting of three 150 kv-a. single phase transformers, 26,400 volt primary, 2,300 volt secondary, also switching equipment for one 26,400 volt line and two 2,300 volt feeders, is being supplied and installed by the Canadian General Electric Company. The 26,400 volt protective equipment was furnished by Siemens Company of Canada.

Rapids Power Company (Morrisburg)

Assistance was given this company in connection with the purchase of equipment for its step-up transformer station at Morrisburg for stepping up the voltage to 26,400 for transmission to Prescott and other municipalities in the district.

General

Toronto Storehouse (Building)

This building which was completed and placed in service in the spring of 1913, consists of three stories and a basement, and has a gross floor area of approximately 28,000 square feet. The general arrangement of the building is as follows:—

Basement—Machine shop, stores and laboratory.
Main Floor—Office, garage, shipping and receiving room and laboratory.
Second Floor—Stores and laboratory.
Third Floor—Stores.

Laboratory Equipment

Tenders were requested covering the supply of miscellaneous laboratory equipment consisting of three 50 kv-a. transformers for stepping down from 13,200 to 230/115 volts, storage batteries, motor generator sets, testing transformers, potential regulator and switchboard. The main transformers have been purchased from the Packard Electric Company. Full information with regard to the balance of the equipment has not yet been received.

Corporation of Bobcaygeon

Assistance was given the Village in connection with the installation of wiring and switching equipment in the local Municipal station.

Corporation of Welland

The Corporation was assisted in the purchase of a 2,200 volt feeder panel and an automatic potential regulator for their sub-station. Assistance was also given the Standard Steel Construction Company in connection with the design and construction of their sub-station.

Parliament Buildings

The equipment previously referred to as having been purchased by the Provincial Department of Public Works for installation in the Parliament Buildings was completely installed and placed in service.

Development

A design for a 13,200 volt lightning arrester of horn gap and series oil cooled resistance type was developed. One set was manufactured and placed in service in Mimico Distributing Station.

A horn gap, 3 pole disconnecting switch suitable for mounting on a pole structure for use with outdoor type transformer station was also developed. Two of these switches have been manufactured, one is in use at Rockwood Distributing station. They are also to be used for disconnecting transmission lines at junction points.

WOOD POLE TRANSMISSION LINES

During the year about 200 miles of wood pole transmission line has been placed under construction, and about 133 miles completed and put in operation. Of this 200 miles of line, 113 miles are an extension to the Niagara System, 22 miles extension to the St. Lawrence System, and 65 miles from the new generating plant at Wasdell's Falls on the Severn River.

On November 1st, 1913, the Commission had in operation, or under construction, approximately 555 miles of wood pole lines built to transmit power at voltages from 2,200 to 26,400 volts. The 555 miles of line is a total of the mileage on the various systems as follows:—

Niagara System—378 miles.
St. Lawrence System—45 miles.
Simcoe System—67 miles.
Wasdell's Falls System—65 miles.

In the construction of these lines 23,000 poles have been used, and 1,311 tons of copper aluminum and steel wires and cables.

Several special structures were erected during the past year, such as a wood pole structure to carry apparatus for an outdoor type of transformer station at Rockwood, and wood pole structure to carry aerial line switches at Britannia.

The following tables give, in detail, all particulars of wood pole lines erected during the last year, and totals of all wood pole lines to date.

The mileage of the lines tabulated according to the voltage and number of circuits is as follows:—

Voltage	Single Circuit Totals			Double Circuit Totals			Totals. Single and Double Circuits		
	To Oct. 31st, 1912	October 31st, 1912, to Oct. 31st, 1913	To October 31, 1913	To Oct 31st, 1912	October 31st, 1912, to Oct. 31st, 1913	To 31st Oct., 1913	To Oct. 31st, 1912	October 31st, 1912, to Oct. 31st, 1913	To Oct. 31st, 1913
26,400	.....	1.25	1.25	.....	70.75	70.75	.....	72.00	72.00
22,000	4.50	87.79	92.29	.....	63.90	63.90	4.50	151.69	156.19
13,200	76.77	78.66	155.43	115.46	.....	115.46	192.23	78.66	270.89
6,600	2.42	11.18	13.60	5.79	.....	5.79	8.21	11.18	19.39
4,000	.....	25.25	25.25	.....	.....	.....	.....	25.25	25.25
2,200	5.44	5.68	11.12	.63	.....	.63	6.07	5.68	11.75
Totals	89.13	209.81	298.94	121.88	134.65	256.53	211.01	344.46	555.47

Description of Lines.

Niagara System.

Sec. No.	From	To	Miles	No. of Poles	Voltage	No. of Circuits	Power Cables B. & S. Gauge	Telephone Wires, B & S. Gauge	Work Commenced	Work Completed	In Operation
L.T.											
1	Dundas Sub H.E.P.C. ..	Junction Pole No. 134..	2.84	134	13,200	2	No. 0 Alum.	10	July 13, 1910	Jan. 2, 1911	
2	Junction Pole No. 134..	Beach Pump House....	6.34	323	"	2	0 "	10	July 13, "	Jan. 2, "	
3	" " No. 134..	Asylum	1.13	67	"	1	2 "	10	Dec. 5, "	Feb. 8, "	
4	Berlin Sub. H.E.P.C. ...	Junction Pole No. 10...	.18	10	"	2	0 "	10	Aug. 25, "	Sept.11, 1910	
5	Junction Pole No. 10...	Waterloo	1.64	78	"	2	0 "	10	Sept. 11, "	Nov. 25, "	
6	" " No. 10...	Berlin Corp. Station...	.76	35	"	2	0 "	10	Aug. 25, "	Sept.11, "	
7	Berlin Sub. H.E.P.C....	New Hamburg	12.27	556	"	2	2 "	10	Sept. 11, "	Jan. 2, 1911	Feb. 3,1911
8	Woodstock " ...	Ingersoll	9.90	455	"	2	0 "	10	Nov. 14, "	Mar. 28, "	
9	" " ...	Junction Pole No. 508..	11.12	508	"	2	0 "	10	Jan. 2, 1911	Apr. 29, "	
10	Junction Pole 508	Tillsonburg	10.30	467	"	2	0 "	10	Jan. 2, "	Apr. 29, "	
11	" " 508	Norwich	4.59	207	"	1	2 "	10	Feb. 13, "	Mar. 30 "	
12	St. Thomas Sub.H.E.P.C	St. Thomas Corp. Stn..	1.13	50	"	2	0 "	10	Dec. 14, 1910	Dec. 30, 1910	
13	Stratford " ..	Stratford " ..	1.75	78	"	1	2 Copper	10	Built by Corporation		
14	Preston " ..	Junction Pole No. 99...	2.04	99	6,600	3	1-2Alum 2-4/0 "	10	Oct. 8, 1910	Jan. 19, 1911	
15	Junction Pole No. 99...	Hespeler	2.08	99	"	1	2 Alum	10	Oct. 8, "	Dec. 30, 1910	
16	" " 99...	Galt.....	3.75	173	"	2	4/0 "	10	Oct. 8, "	Jan. 19, 1911	
17	Preston Sub H.E.P.C...	Preston Corp. Station..	.14	11	"	1	2 Copper	10	Built by Corporation.		
	These poles also carry Section L.T. 35 circuits to G. P. H. Railway Snb.										
18	London Sub.	Junction Pole No. 38..	.79	38	13,200	2	1-3/0 Alum 1-2 "	10	Oct. 26, 1910	Jan. 10, 1911	
19	Junction Pole No. 38...	Asylum London	1.54	70	"	1	2 "	10	Oct. 26, "	Jan. 19. "	
20	" " 38...	Junction Pole No. 93...	1.20	55	"	1	3/0 "	10	Oct. 24, "	Jan. 21, "	
21	London Sub. H.E.P.C...	London Sub. No. 1.....	3.56	178	"	1	3/0 "	10	Oct. 20, "	Jan. 20, "	
22	Junction Pole No. 93...	" " 1....	1.71	96	"	2	1-3/0 " 1-1/0 "	10	Dec. 23, "	Jan. 20, "	
23	" " 93...	" " 2....	.31	20	"	1	0 "	10	Dec. 23, "	Jan. 20, "	
24	London Sub. No. 1	Dundas Town	3.55	156	"	1	0 "	10	Jan. 1, "	Jan. 7, "	
25	Dundas Sub. H.E.P.C..	Springbank.....	.98	58	2,200	2	1-400 M.c.m. 1-250 M.c.m.	Alum Copper	Dec. 1, "	Jan. 1, "	
26	Pt. Credit Sub. H.E.P.C.	Port Credit	2.74	129	13,200	2	2 Alum	10	Feb. 24, 1911	July 10, "	
26a	"	Pt. Credit Brick Wks..	.24	14	"	2	2 "	10	Apr. 5, "	July 23 "	
27	" Sub. H.E.P.C.	Brampton	11.24	510	"	2	2 "	10	Feb. 15, "	May 6, "	
	These poles also carry Section L.T. 34 Circuits from poles No. 1 to 89—1.94 miles										
28	Stratford Sub. H.E.P.C.	Junction Pole No. 648..	14.39	648	13,200	2	2 Alum	10	Apr. 6, 1911	Aug. 4, 1911	
	These Circuits carried on Stratford City poles Nos. 2 to 24, inclusive, erected by Corporation.										

29	Junction Pole No. 648..	Seaforth	12.86	581	13,200	2	2 Alum	10	Mar. 25, 1911	Sept.13, 1911		
30	" " 648..	Mitchell	1.27	63	"	2	2 "	10	Mar. 24, "	Aug. 3, "		
31	Guelph Sub. H.E.P.C...	O. A. College	1.58	77	"	1	0 "	10	July 21, "	Nov. 9, "		
	" H.E.P.C.Sub. Prop.		.09	8	550D.C. / 2,200A.C. / 13,200A.C.	1 / 4 / 3	Municipal lines / 0 Alum	10	Aug. 7, 1911	Sept. 3, 1911	Sept.4,1911	
		18 poles on Station Property in all.										
34	Pt. Credit Sub. H.E.P.C.	Weston	14.07	551	13,200	2	2 Alum	8	Apr. 19, "	July 24, "		
		These Circuits carried on Section L.T. 27 poles, 1 to 89, inclusive										
35	Preston Sub. H.E.P.C..	G. P. & H. Ry.	.20	6	6,600	1	0 Alum	10	Mar. 13, "	Mar. 21, "		
		These Circuits carried on Sections L.T. 17 poles, 1 to 11, inclusive										
36	Jct. Pole No. 34, Port Credit	Mimico (New Toronto)	5.75	276	13,200	1	2 Alum	8	Apr. 26, "	Feb. 29, 1912		
38	Dundas Sub. H.E.P.C...	Dom. Sewer Pipe Wks.	7.35	350	"	1	2 "	8	July 21, "	Dec. 19, 1911	Apr. 6,1912	
39	Hamilton Asylum P.H..	Hamilton Asylum	.63	30	2,200	2	4 Copper	10	Sept. 26, "	Oct, 27, "	Apr. 6, "	
40	Junction Pole No. 260..	Waterdown	1.50	72	13,200	1	2 Alum	8	Sept. 30, "	Oct. 10, "	Apr. 6, "	
40a	Dom. Sewer Pipe Wks.	Junction Pole No. 260..	1.92		"	1	2 "	8	Sept. 30, "	Oct. 7, "	Mar. 1, "	
41	St. Thos. Sub. H.E.P.C.	Port Stanley	12.27	573	"	1	2 "	8	Oct. 16, "	Mar. 8, 1912	Mar. 9, "	
42	Junct. Pole, Sec. L.T. 48 at Beachville	Standard White Lime Co.	1.00	2	2,200	1	2 "					
42a	Standard White Lime Co.	These circuits carried on Section L.T. 8 poles, from Beachville pole 290 to pole 240. Temporary connection.			2,200	1	2 Alum		Dec. 6, 1911	Dec. 16, 1911	Dec. 21, '11	
43	Dundas Sub. H.E.P.C..	Jno. Bertram & Son	1.21	10	13,200	1	2 "		" 1 "	" 19 "	"	
		These Circuits carried on Section L.T. 25 poles, 1 to 58 inclusive.—.98 miles										
45	Jct. Pole No. L.. 8-240	Beachville	.09	3	13,200	1	0 Alum	8	June 1, 1912	June 29, 1912	July 17, '12	
46	St. Mary's Sub.	St. Mary's Cement Wks.	2.22	80	"	1	3/0 "	8	July 15, "	Aug. 19, "	Sep. 7, "	
47	Dundas Sub.	Caledonia	14.36	674	"	1	3/0 "	8	May 10, "	Sep. 18, "	" 20, "	
47a	Caledonia	Paris Alabastine Co...	.22		2,200	1	2/0 D.B.W.P. Copper		Sep. 5, "	Sep. 18, "	" 20, "	
		These Circuits carried on Section L.T. 49 poles.										
48	Caledonia	Junction Pole No. 940..	5.87	267	13,200	1	3/0 Alum	8	June 22, "	Sep. 18, "	Sep. 20, '12	
49	Junction Pole No. 940..	Hagersville	3.79	176	"	1	2 "	10	Feb. 28, 1913	May 2, 1913	Aug. 15, '13	
50	" " 940..	Lythmore	4.98	230	"	1	3/0 "	8	June 15, 1912	Sep. 18, 1912	Sep. 20, "	
55	St. Thomas Sub. H.E.P.C	L.L.E. Ry. Sub.	1.68	88	"	1	2 "	8	Aug. 9, "	Oct. 11, "	Oct. 27, "	
56	Jct. Pole 36-240	Toronto Golf Club	3.24	11	2,200	1	6 D.B.W.P. Copper		June 10, "	Aug. 3, "	Aug. 6, "	
56e	Extension from Sect. L.T. 56	Toronto Township	0.9	37	2,200	1	6 "		Nov. 22, "	Jan. 3, 1913	Dec. 24, "	
57	O. A. College	Guelph Prison Farm, Pole 156	1,93	86	13,200	1	2 Alum	8	Aug. 19, "	Dec. 14, 1912	Dec. 14, "	
57a	Guelph Prison Farm	Property	.08	4	"	1	2 "	10	May 14, 1913	May 19, 1913	Sep. 4 '13	
58	Guelph Prison Farm, Pole 156	Junction Pole No. 454..	6.42	297	"	1	2 "	8	Aug. 19, 1912	Dec. 14, 1912	Dec. 14,'12	
59	Junction Pole No. 454..	Acton	5.82	268	"	1	2 "	8	" 19, 1912	Dec. 14, 1912	Dec. 14, "	
60	St. Catharines	Port Dalhousie	3.18	142	2,200	1	1/0 "		Oct. 16, 1912	Nov. 21, "	Nov. 17, "	
61	Caledonia Sub.	Caledonia	.30		"	1	4 D.B.W.P. Copper		Nov, 20, 1912	Nov. 30, "	Nov. 30, "	
		Carried on Section L.T. 50 poles.										

Niagara System.—Continued.

Sec. No. L.T.	From	To	Miles	No. of Poles	Voltage	No. of Circuits	Power Cable B. & S. Gauge	Telephone Wires, B. & S. Gauge	Work Commenced	Work Completed	In Operation
62	Jct. Pole L.T. 27-230 ..	Milton	16.65	740	13,200	1	3/0 Alum	10	Nov. 25, 1912	Mar. 13, 1913	Mar. 13, '13
63	Preston Sub.	Doon Twine Mill	4.18	208	6,600	1	2 "	.....	Dec. 2, 1912	Apl. 11, "	Apl. 1, "
		Carried on Section L.T. 17 poles, No. 1 to 17, inclusive.									
64	Mimico Sub.	Mimico Asylum	1.51	17	2,200	1	2 Copper	.....	Mar. 30, 1912	Feb. 3, "	Apl. 26, "
		Carried on Section L.T., 36 poles									
65	Acton	Georgetown	9.03	411	13,200	1	3/0 Alum	10	Mar. 11, 1913	Aug. 1, "	Aug. 1, "
66	Junction Pole No. 454..	Rockwood	1.64	77	"	1	2 "	10 CC. Steel	May 6, 1913	July 3, "	Aug. 1, "
67	Stratford Sub. H.E.P.C.	Goderich	48.30	1,150	26,400	2	3/0 "	"	.....	.....	.....
		Carried on Section L.T. 28 and L.T. 29 poles, to Seaforth Junction from Stratford.									
68	Brant Station	Paris	3.50	175	26,400	2	3/0 Alum	10 CC. Steel	.....		
69	" "	Brantford	6.50	325	26,400	2	3/0 "	"	.....		
71	Waterloo	Elmira	12.00	600	13,200	1	2 "	"	.....		
72	Preston	Breslau.....	7.00	350	6,600	1	2 "	"	.....		
74	Niagara Falls	Welland	14.75	.....	26,400	4	3/0 "	Steel poles	.....	Under Construction.	
76	Junction Pole	Crumlin Junction	5.50	243	13,200	1	2 "	.....	.....		
77	Crumlin Junction.....	Thorndale	7.50	331	"	1	2 "	.....	.....		
78	" "	Thamesford	6.75	298	"	1	2 "	.....	.....		
79	Junction Pole No. 381-62.	Streetsville.....	.43	22	"	1	2 "	10 CC. Steel	.....		
80	" "	Clinton	1.25	63	26,400	1	3/0 "	"	.....		

Severn System

S.L.											
1	Waubaushene (S.R. & P. Co.)	Jct. Pole (Coldwater)..	4.29	193	22,000	2	4/0 Alum	10 CC. Steel	Sep. 20, 1912	Feb. 18, 1913	Feb. 24, '13
						1	2 "	"	Sep. 20, 1912	Feb. 18, ,,	"
2	Jct. Pole (Coldwater)..	Coldwater Sub.	1.16	55	"	2	4/0 "	"	Sep. 25, 1912	Feb. 18, ,,	"
3	" " " ..	Jct. Pole (Elmvale) ..	15.86	710	"	1	2 "	"	Feb. 1, 1913	May 17, ,,	May 27, "
4	" " (Elmvale) ..	Elmvale Sub.	.42	19	"	2	4/0 "	"	Oct. 20, 1912	Feb. 18, "	Feb. 24, "
5	" " " ..	Jct. Pole (Phelpston)..	4.55	207	"	2	2/0 "	"	Nov. 6, 1912	Apl. 5, "	April 6, "
6	" " (Phelpston) .	Barrie Sub.	12.27	550	"	2	3/0 "	"	Oct. 23, 1912	Feb. 18, "	Feb. 24, "
7	" " " ..	Jct. Pole (Stayner) ...	15.07	675	"	2	3/0 "	"	Jan. 24, 1913	Apl. 26, "	Sep. 25, "
8	" " (Stayner) ...	Stayner Sub.	1.50	68	"	1	2 "	"	Jan. 24, 1913	Apl. 26, "	Sep. 25, "
9	" " " ...	Collingwood Sub.	11.86	530	"	2	3/0 "	"	Nov. 1, 1912	Feb. 18, "	Feb. 24, "
L.T.											
37	Midland (S.R. & P. Co.)	Penetang Sub.	4.50	223	"	1	2 "	10 CC. Steel	June 7, 1911	July 18, 1911	July 18, '11

St Lawrence System.

L.											
1	Morrisburg	Prescott.....	22.96	1,083	22,000	1	3/0 Alum	10 CC. Steel	Oct. 29, 1912	June 14, 1912	Oct. 1913
2	"	Winchester.....	16.00	800	"	1	3/0 "	"	(Under construction)		.....
3	Winchester	Chesterville	6.25	330	"	1		"	"	"	.....

Wasdell's Falls System

W. L.												
1	Wasdell's Falls	Jct. No. 1	27.25	1,363	22,000	1	No. 0 al	10	CC.Steel			
2	Jct. No. 1	Beaverton	1.75	88	22,000	1	No. 0 al	10	CC.Steel			
3	Jct. No. 1	Cannington	10.50	525	22,000	1	No. 0 al	10	CC.Steel			
4	Beaverton	Gamebridge	6.50		4,000	1	No. 0 al					
5	Gamebridge	Brechin	3.75		4,000	1	No. 0 al					
5	Cannington	Woodville	7.25	264	4,000	1	No. 0 al					
7	Cannington	Sunderland	7.75	387	4,000	1	No. 0 al					
			64.75	2,627								

Gauge, Length and Weight of Conductors

Browne and Sharpe Gauge.	Wire Miles.			Weight Pounds.			Single Miles Circuit.			Miles Double Circuit.		
	To Oct. 31, 1912.	Oct. 31, 1912, to Oct. 31, 1913.	To Oct. 31, 1913.	To Oct. 31, 1912.	Oct. 31, 1912, to Oct. 31, 1913.	To Oct. 31, 1913.	To Oct. 31, 1912.	Oct. 31, 1912, to Oct. 31, 1913.	To Oct. 31, 1913.	To Oct. 31, 1912.	To Oct. 31, 1913.	Oct. 31, 1913.
400 M.C.M. Alum	1.67	.....	1.67	3,205	.....	3,205	.53	.....	.53	.....	.....	.....
4/0 Alum	36.48	206.01	242.49	37,283	210,542	247,825	.....	16.00	16.00	5.79	24.70	30.49
3/0 "	109.27	699.30	808.57	88,618	567,132	655,750	34.69	56.14	90.83	.....	82.93	82.93
2/0 "	.....	77.30	77.30	.....	47,704	47,704	.....	.....	.....	.....	12.27	12.27
1/0 "	300.16	206.16	506.32	153,082	110,515	263,597	7.53	68.53	76.06	43.88	.....	43.88
2 "	578.15	211.81	789.96	185,586	67,991	253,577	45.83	67.24	112.62	69.08	.....	69.08
250 M.C.M. D.B.W.P. Copper	1.42	.....	1.42	2,043	.....	2,043	.45	.....	.45	.....	.....	.....
No. 4/0 Bare Copper Cable	.....	139.39	139.39	.....	459,151	459,151	.....	14.75	14.75	.....	14.75	14.75
2/0 D.B.W.P. Copper	.69	.....	.69	1,587	.....	1,587	.22	.....	.22	.....	.....	.....
No. 2 Bare Copper	13.29	4.75	18.04	17,131	6,123	23,254	4.22	1.51	5.73	.....	.....	.....
No. 4 D.B.W.P. Copper	3.97	.94	4.91	3,057	724	3,781	.....	.30	.30	.63	.....	.63
No. 6 D.B.W.P. Copper	10.21	.28	10.49	5,176	142	5,318	3.24	.09	3.33	.....	.....	.....
Totals	1,055.31	1,545.94	2,601.25	496,768	1,470,024	1,966,792	96.26	224.56	320.82	119.38	134.65	254.03

Gauge, Length and Weight of Copper Clad Steel Wire

USED ON LOW TENSION TELEPHONE LINES

Brown and Sharpe Gauge.	Wire Miles.			Weight in Pounds.			Mileage Single Circuit.		
	To Oct. 31st, 1912.	Oct. 31st, 1912, to Oct. 31st, 1913.	Totals to Oct. 31st, 1913.	To Oct. 31st, 1912.	Oct. 31st, 1912, to Oct. 31st, 1913.	Totals to Oct. 31st, 1913.	Totals to Oct. 31st, 1912.	Oct. 31st, 1912, to Oct. 31st, 1913.	Totals to Oct. 31st, 1913.
No. 10.....	283.33	540.75	824.08	43,689	73,715	117,404	134.92	259.88	394.30
No. 8.....	147.34	63.46	210.80	36,098	15,548	51,646	70.16	30.22	100.38
Totals.....	430.67	604.21	1,034.88	79,787	89,263	169,050	205.08	289.60	494.68

Total Mileage of Lines

—	Totals to Oct. 31st, 1912.	Year Oct. 31st, 1912, to Oct 31st, 1913.	Totals to Oct. 31st, 1913.
Total mileage low tension lines	344.58	210.89	555.47
Total mileage single circuit lines	225.35	91.41	316.76
Total mileage double circuit lines	119.23	119.48	238.71
Total mileage low tension telephone lines	325.48	166.52	494.68
Total mileage lines completed	236.68	120.79	357.47
Total mileage under construction	107.90	.....	198.00
Total number of poles	15,478	7,825	23,303

Total Weights and Mileages of Cable and Wire

Cable or Wire	Wire Miles.			Weight in Pounds.		
	To Oct. 31st, 1912.	Oct. 31st, 1912, to Oct. 31st, 1913.	To Oct. 31st, 1913.	To Oct. 31st, 1912.	Oct. 31st, 1912, to Oct. 31st, 1913.	To Oct. 31st, 1913.
Aluminum Cable	1,025.73	1,400.48	2,426.21	467,774	1,003,884	1,471,658
Copper Cable	2.11	139.39	141.50	3,630	459,151	462,781
Copper Wire	27.47	5.97	33.44	25,364	6,989	32,353
Copper Clad Steel Wire	430.67	604.21	1,034.88	79,787	99,263	179,050
¼ in. Steel Cable	215.19	340.23	555.42	181,835	276,395	458,230
Totals	1,701.17	2,490.28	4,191.45	758,390	1,845,682	2,604,072

CHAPTER III

OPERATION OF THE SYSTEMS

NIAGARA SYSTEM

The general operation of the Niagara System for the past fiscal year has been very satisfactory. The power supply furnished to the Commission by the Ontario Power Co. has been practically continuous throughout the year. The majority of interruptions experienced on the Commission's Niagara System last year were due to the failure of the high tension insulators on the Commission's lower lines, and extended over a period from June 12th to Aug. 22nd, during which time all the insulators on the system were inspected and the defective units replaced, thus eliminating the trouble from this cause.

During the year thirty-five different electrical storms were reported over the System, of which twelve were severe and the balance moderate. The first storm occurred on February 22nd and the last on October 2nd. There were ten of these storms which travelled over the entire System, while twenty were confined to the Western loop and five to the vicinity of Cooksville high tension station.

Experience from preceding years, as well as the past summer, seems to point out that Woodstock, St. Mary's and Cooksville are the vicinities where electrical storms are more prevalent and severe than on other parts of the Commission's Niagara System.

The high tension transmission line is in good condition at the present time, and the cable itself required little or no attention during the past year.

Due to the rapid growth of the System it was found necessary to take down the No. 3/0 aluminium cable circuit on a section of the high tension transmission line between London and St. Thomas and to string two circuits of No. 3/0 copper equivalent steel re-inforced aluminum cable. This work has been completed by the Line Maintenance Department and work will be started at once on the double circuiting of the southern half of the western loop, which extends between Dundas and London stations, with No. 4/0 copper equivalent steel re-inforced aluminum cable. This double circuit of No. 4/0 equivalent will replace the present single circuit of No. 3/0 aluminum cable.

When this work is complete there will be three separate circuits between Dundas and London. This will tend to greatly increase the flexibility of the System and the reliability of the service.

The adoption of the steel reinforced aluminum cable in preference to the straight aluminum cable heretofore used was decided upon after careful investigations.

The low tension lines on the Niagara System have given satisfactory operation and at the present time arrangements are being made for the installation of sectionalizing and tap switches on these lines, which will add considerably to the efficiency of operation and maintenance of power supply.

The following low tension lines were gone over during the year and straightened and the sags readjusted where necessary:—

Waterloo, New Hamburg and Baden, Stratford, Port Stanley, Tillsonburg and Norwich, Ingersoll and Beachville, and Waterdown.

All the low tension lines on the System are being patrolled at least once a week. All the private telephone equipment and lines are in first class condition and required very little line maintenance work, except tree trimming in some localities, during the past year.

The electrical and mechanical equipment of the high tension stations is also in first class condition and operating very satisfactorily. Both the high tension and the low tension electrolytic lightening arresters in all the stations have been thoroughly overhauled and cleaned, and new electrolyte added by the Station Maintenance Department in the past year. This was done in order to keep the arresters in perfect condition so that they would be able to dissipate with ease the abnormal charges which sometimes accumulate on the transmission lines.

At the Preston and Berlin stations an emergency bus bar has been installed, and by means of this a single operator, without help, can, in case of a breakdown to a transformer, disconnect the bad transformer and connect the spare transformer in a very few minutes. This detail will add considerably to the reliability of the power supply.

The outside appearance of the stations has been further improved during the year. Most of this work has been done by the operators themselves and consisted of painting, gardening, etc., all of which had added to the appearance of the station and grounds.

A glance through the various increases will show the gratifying growth of the Niagara System.

The following municipalities were supplied with power during the fiscal year; the table as given below, as well as the accompanying curves, shows the increases in the power loads:—

Municipality	Load in h.p. Oct. 1912	Load in h.p. Oct. 1913	Increase in h.p.
Toronto	13036.5	17997.5	4961
London	2681	3385	704
Guelph	1273.5	1488	214.5
Stratford	643.5	791	147.5
Mitchell	221	201	.....
St. Thomas	643.5	1173	529.5
Woodstock	837.5	808.5	.....
Ingersoll	496	469	.....
Tillsonburg	194.5	208	13.5
Berlin	1226.5	1434.5	208
Waterloo	402	409	7
New Hamburg	107	153	46
Preston	643.5	931.5	288.5
Galt	643.5	1025.5	382
Hespeler	107	254.5	147.5
St. Mary's	261	368.5	107.5
Dundas	127.5	268	140.5
Hamilton	2044	3639.5	1595.5
Hamilton Asylum	87	80.5	.....
Weston	100.5	151.5	51
Brampton	382	474.5	92.5
Norwich	67	104.5	37.5
Seaforth	174	214.5	40.5
Waterdown	40	41.5	1.5
Ontario Agriculture College	114	129	15
London Asylum	67	120	53
Pt. Stanley	40	73	33
Baden	13.5	165	151.5
Mimico	50	71	21
Beachville	27	100.5	73.5
Pt. Credit	24	33.5	9.5
Caledonia	13.5	32	18.5

A list of the municipalities connected to the Niagara System during the past year is given below:—

Municipality	Date Connected	Initial Load in h.p.	Present Load in h.p.	Increase in h.p.
Hagersville	Aug. 15th, 1913	108.5	120.5	12
Central Prison Farm	Sept. 3rd, 1913	36.5	31	.....
Rockwood	July 31st, 1913	25	25	.....
Georgetown	July 31st, 1913	76	83	7
Acton	Dec. 11th, 1912	53.5	56	2.5
Cooksville	Aug. 4th, 1913	.....	.....	.....
Milton	Mar. 13th, 1913	187.5	321.5	134
Mimico Asylum	April 26th, 1913	100	161	61
Toronto Twp	Aug. 2nd, 1913	56.5	80.5	24
Elmira	Oct. 25th, 1913	.....	.....	.....
Streetsville	Oct. 11th, 1913	.....	.....	.....

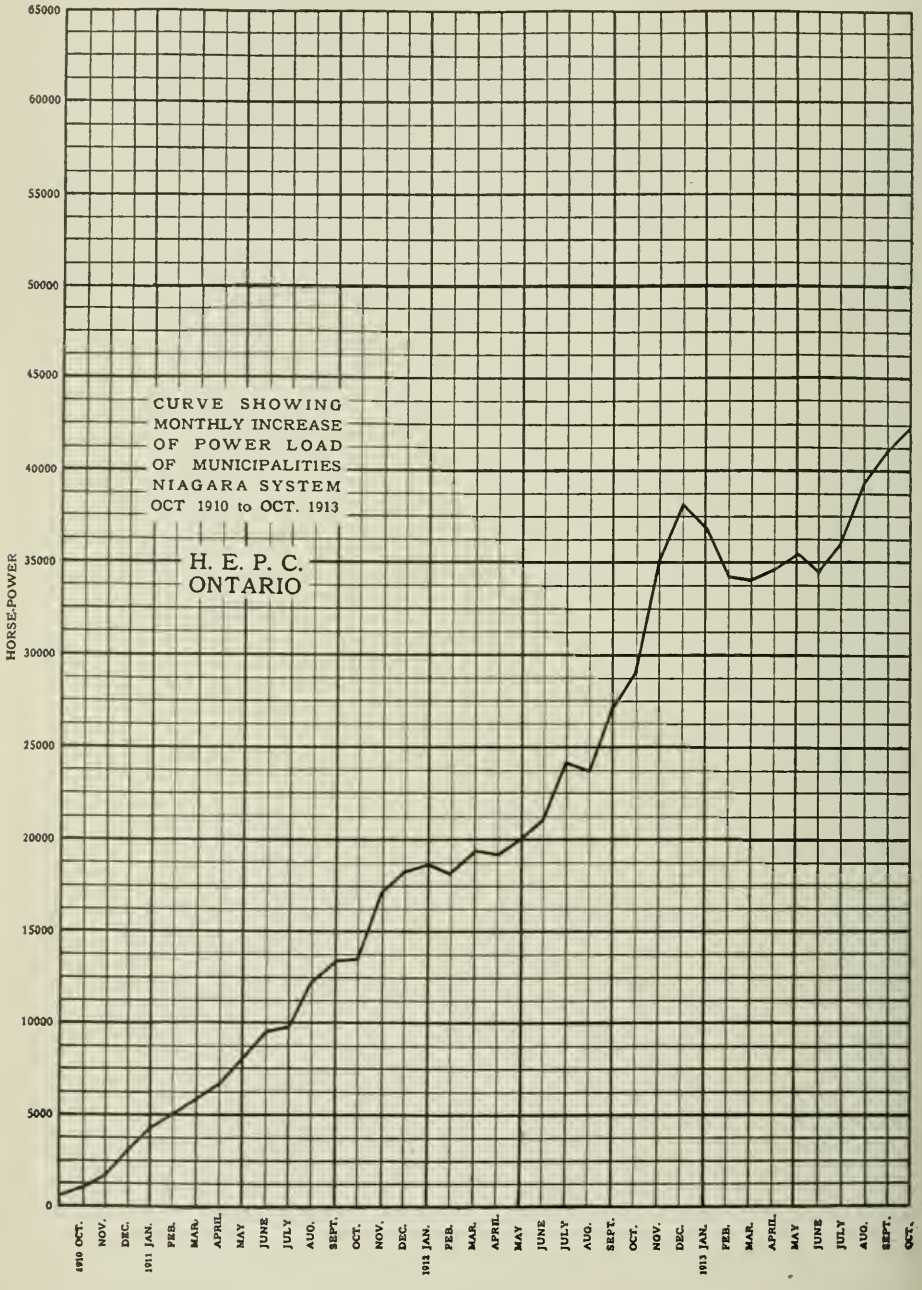
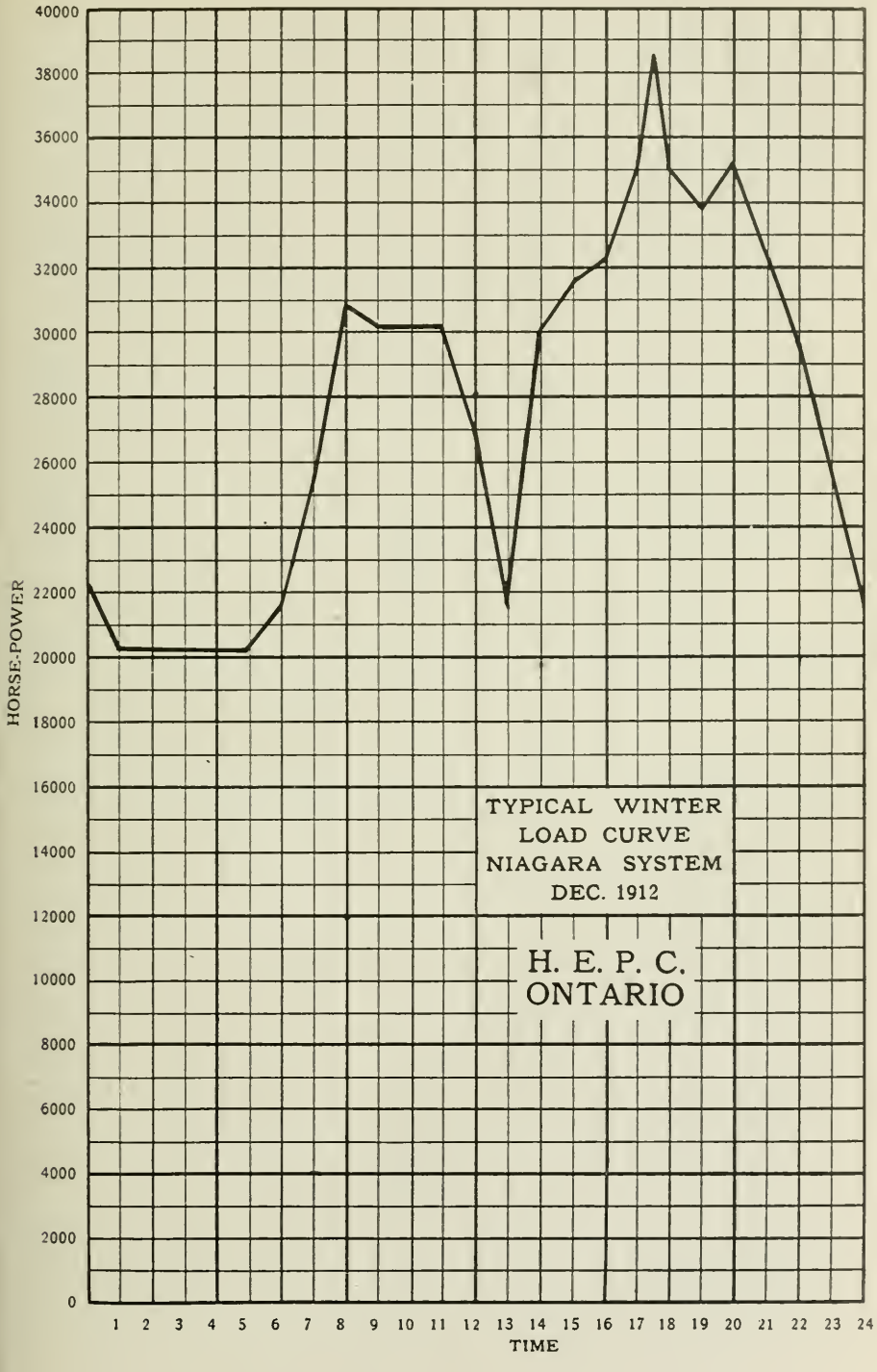
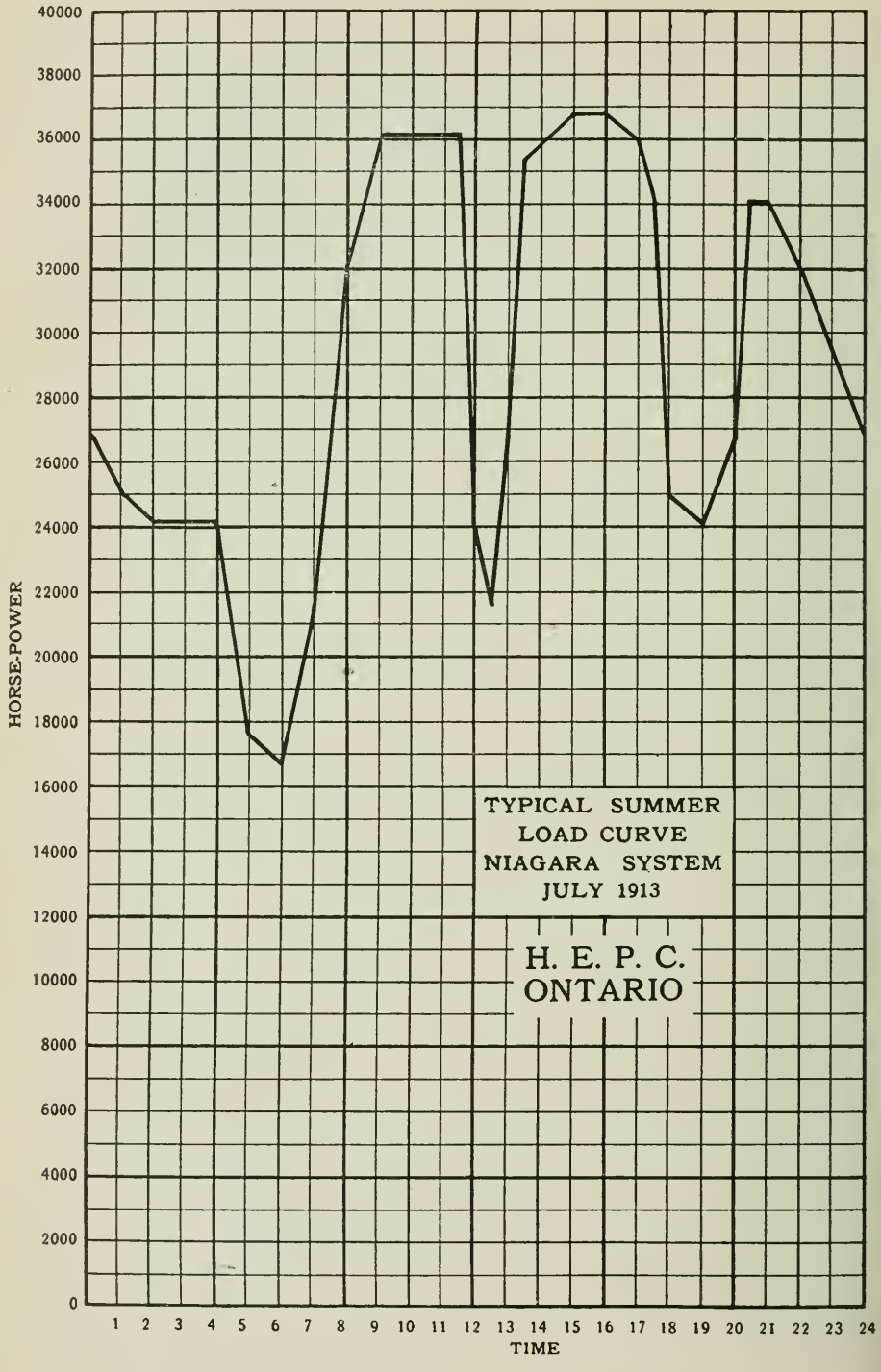
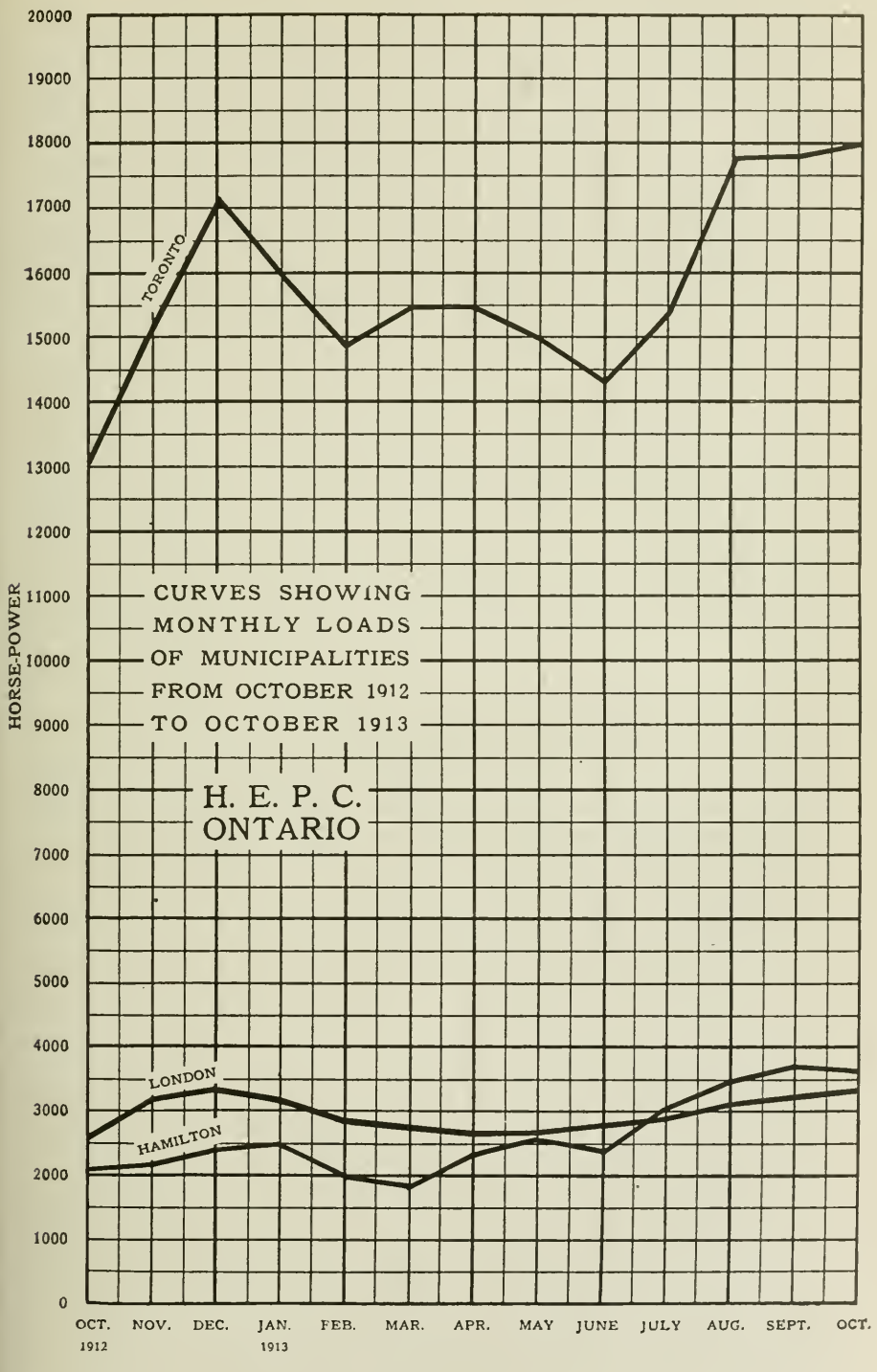
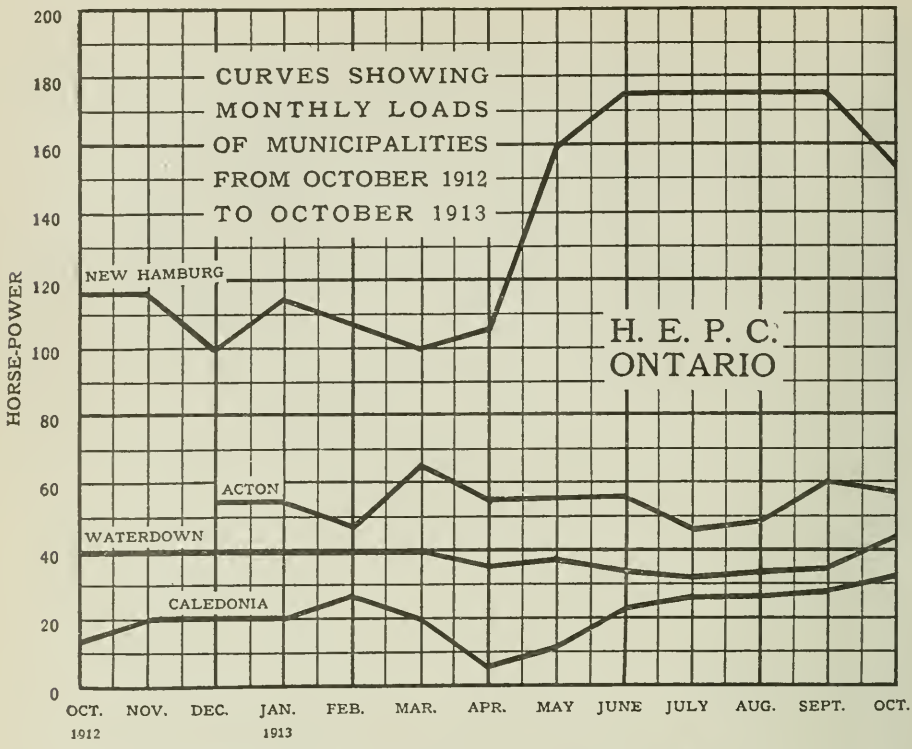


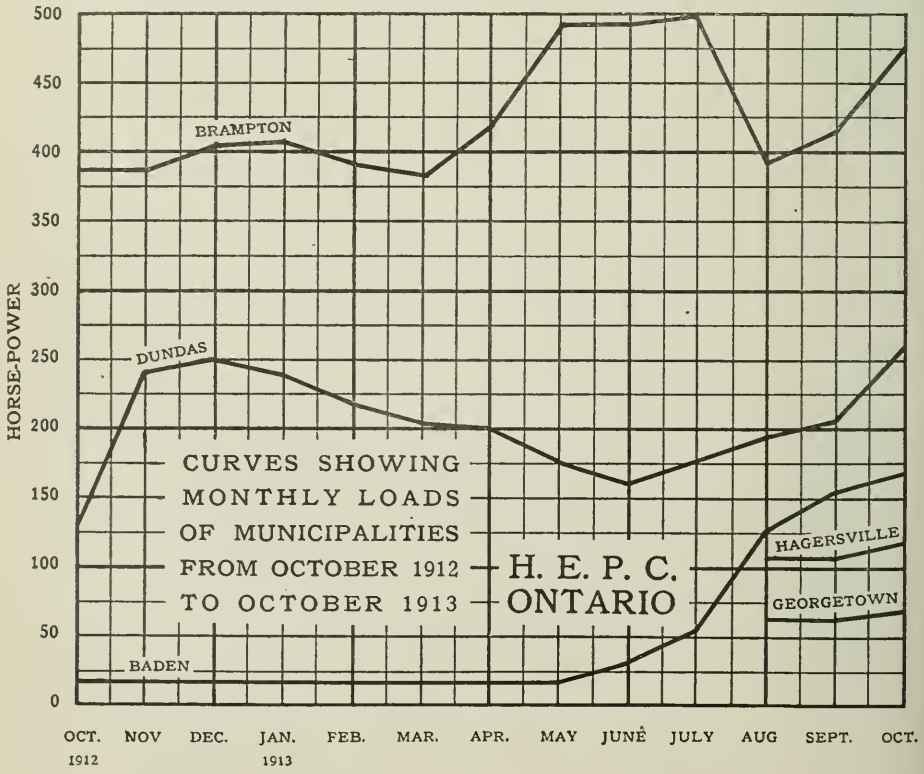
Chart Showing Power Consumption of Municipalities

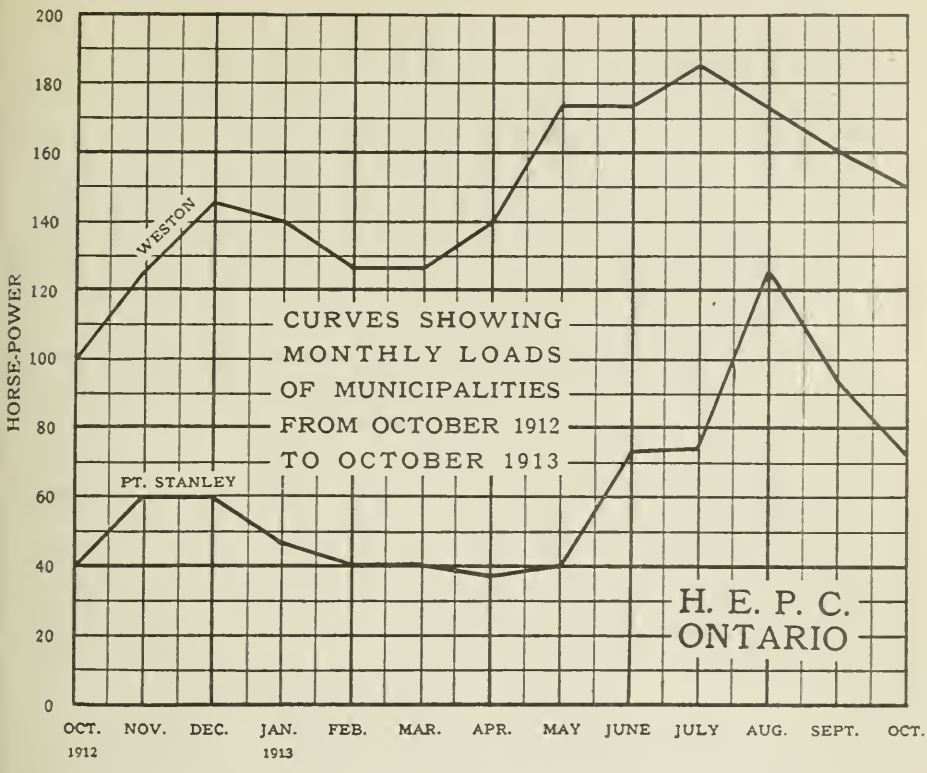

HORSE-POWER
40000
38000
36000
34000
32000
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
TIME
TYPICAL WINTER
LOAD CURVE
NIAGARA SYSTEM
DEC. 1912
H. E. P. C.
ONTARIO

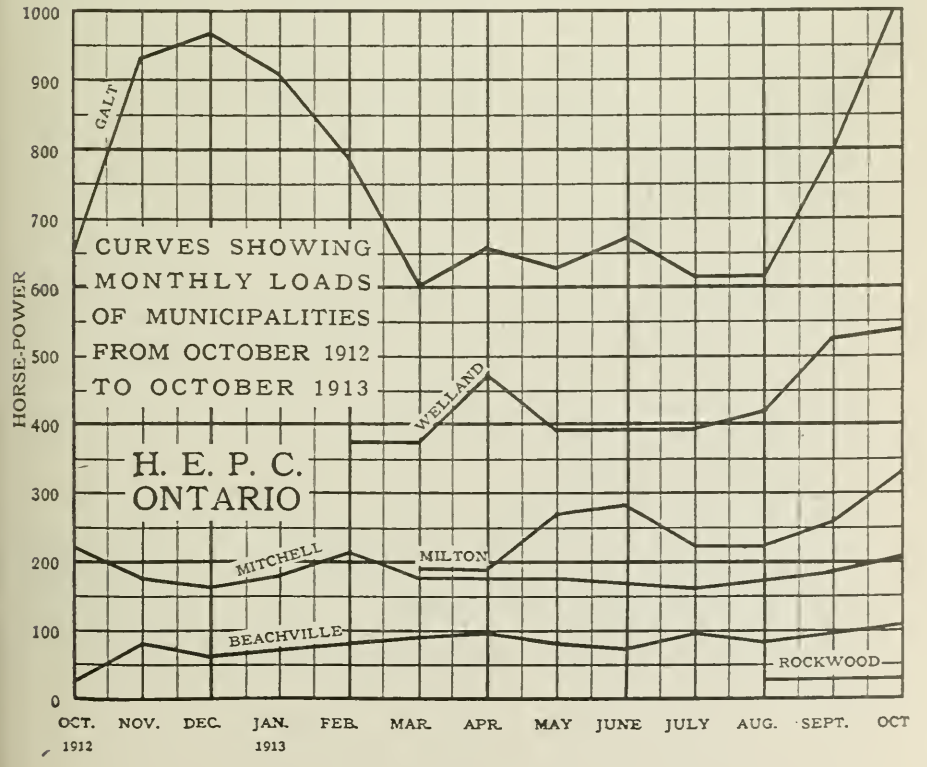

HORSE-POWER
40000
38000
36000
34000
32000
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
TIME
TYPICAL SUMMER
LOAD CURVE
NIAGARA SYSTEM
JULY 1913
H. E. P. C.
ONTARIO

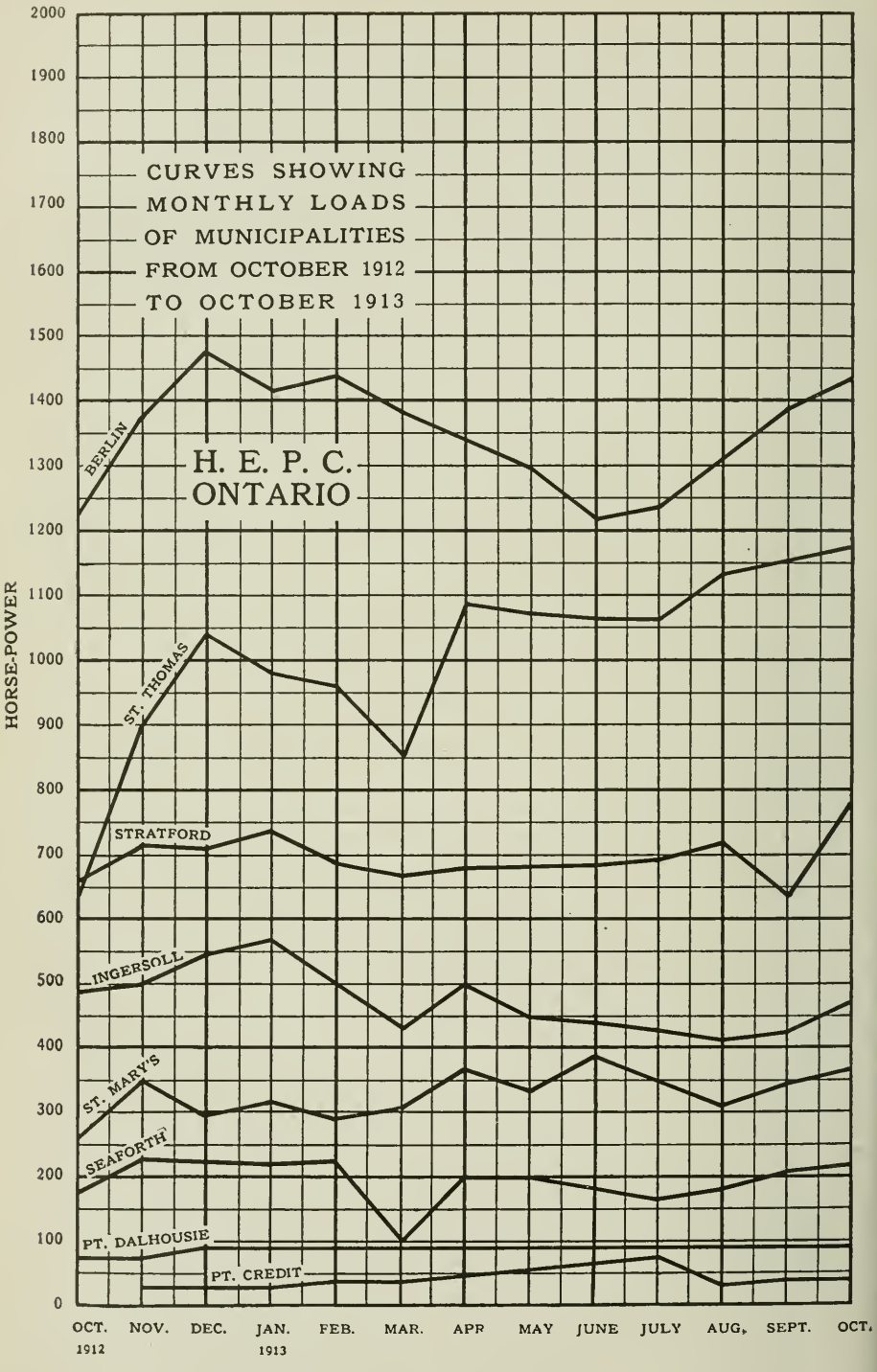

HORSE-POWER
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
TORONTO
LONDON
HAMILTON
CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.

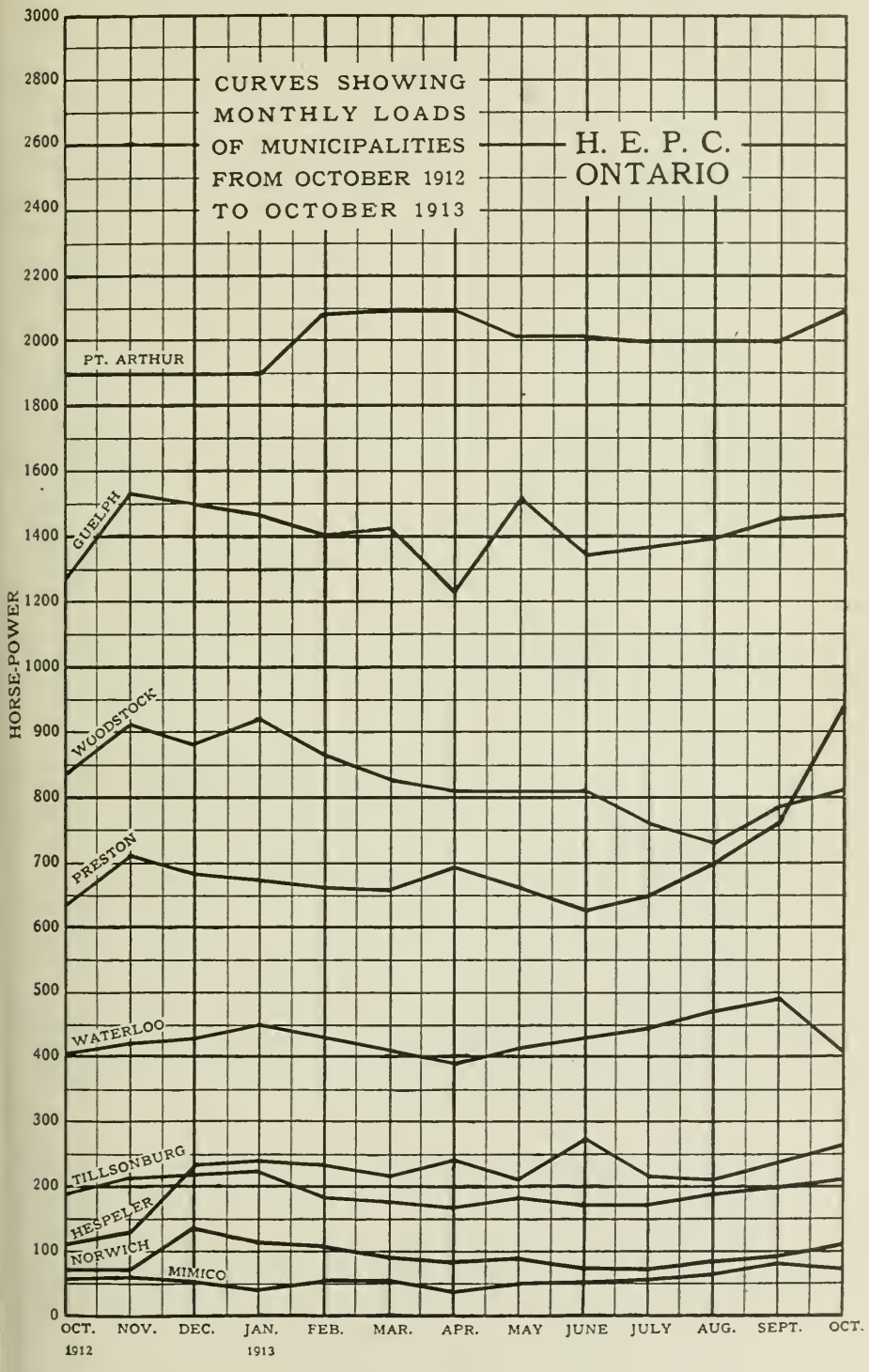

CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
HORSE-POWER
NEW HAMBURG
ACTON
WATERDOWN
CALEDONIA
200
180
160
140
120
100
80
60
40
20
0
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.


CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
HORSE-POWER
BRAMPTON
DUNDAS
BADEN
HAGERSVILLE
GEORGETOWN
500
450
400
350
300
250
200
150
100
50
0
OCT. 1912
NOV
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG
SEPT.
OCT.


HORSE-POWER
200
180
160
140
120
100
80
60
40
20
0
WESTON
PT. STANLEY
CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.


HORSE-POWER
1000
900
800
700
600
500
400
300
200
100
0
GALT
CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
WELLAND
H. E. P. C.
ONTARIO
MITCHELL
MILTON
BEACHVILLE
ROCKWOOD
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT


CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
HORSE-POWER
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
BERLIN
ST. THOMAS
STRATFORD
INGERSOLL
ST. MARY'S
SEAFORTH
PT. DALHOUSIE
PT. CREDIT
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR
MAY
JUNE
JULY
AUG.
SEPT.
OCT.


CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
HORSE-POWER
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
900
800
700
600
500
400
300
200
100
0
PT. ARTHUR
GUELPH
WOODSTOCK
PRESTON
WATERLOO
TILLSONBURG
HESPELER
NORWICH
MIMICO
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.

The total capital investment for the Niagara system to October 31st, 1913, is as follows:—

Right-of-Way, including Windsor Extension	$605,923 24
Steel Tower Transmission Lines, including Windsor Extension	1,895,478 09
Telephone Line	129,681 69
Relay System Lines	54,537 32
Conduit System, Ontario Power Co., to Niagara Station	47,924 92
Wood Pole Lines	775,980 81
Transformer Stations	1,571,784 04
Distributing Stations	73,666 16
Rural Line Construction	35,882 71
Total	$5,190,858 98

The operating and maintenance expenses of the Niagara System for the fiscal year ending October 31st, 1913, are as follows:—

Operators' salaries and expenses, including operating supplies	$42,192 85
Maintenance of H. T. Stations	19,659 83
Maintenance of L. T. Stations	740 40
Maintenance of H. T. Transmission Lines	10,730 41
Maintenance of L. T. Transmission Lines	10,707 13
Administration and general office expenses	25,963 61
Total	$109,994 23

A financial statement of Niagara System operation for the fiscal year ending October 31st, 1913, is given below:

Disbursements			Receipts			
Power purchased, including losses in transmission and transformation administration, general expenses, operation, maintenance and interest			Power delivered, including charges for administration, general expenses, operation, maintenance and interest			
					Surplus	
——	H.P.	Amount	H.P.	Amount	H.P.	Amount
1st quarter	109,182	150,810 96	109,692.5	$187,260 60	510.5	$36,449 64
2nd quarter	98,100	144,874 03	103,107.1	176,311 75	5,007.1	31,437 72
3rd quarter	105,949	150,208 32	105,511.9	180,867 97	—437.1	30,659 65
4th quarter	122,520	171,358 94	122,411.5	206,751 34	—108.5	35,392 40
	435,751	617,252 25	440,723	751,191 66	4,972	133,939 41

	H.P.	Amount.
Sum of monthly load and revenue	440,723	751,191.66
Sum of monthly load purchased and costs	435,751	617,252.25
Net proceeds	4,972	133,939.41

SECOND ANNUAL ADJUSTMENT OF CAPITAL EXPENDITURES, OPERATING EXPENSES AND FIXED CHARGES.
Niagara System. Fiscal year 1912-1913

	Rate	Yearly average H.P.	Capital Cost	Interest	Maintenance	Operation	Total Interest Maintenance and Operation	Cost of Power including losses	Totalexpensesincluding losses in transmission and transformation; administration & cost of power: General expenses, operation, maintenance and interest	Receipts	Surplus Applicable to Depreciation Reserve Ac.	Shortage on Interest Account	Surplus Applicable to Depreciation Reserve Ac.
	$		$	$	$	$	$	$	$	$	$	$	$
Toronto	15.00	16065	1,150,539.79	44,378.13	7,137.98	14,783.42	66,299.53	141,352.37	207,651.90	240,975.65	33,323.75	.....	.....
Port Credit.	31.00	63.4	15,125.10	524.61	273.05	151.11	948.77	558.40	1,507.17	1,811.39	304.22	.....	.....
Weston	30.00	255.9	62,532.60	2,459.70	1,824.37	695.97	4,980.04	2,251.22	7,231 26	7,643.19	411 93	.....	.....
Brampton	25.00	720.7	106,074.18	4,068.83	3,083.11	1,608.77	8,760.71	6,341.15	15,101.86	18,191.74	3,089.88	.....	.....
Milton	28.00	420.8	88,573.24	3,112.39	1,607.53	987,96	5,707.88	3,702.44	9,410.32	8,321.10	.....	1,089.22	.....
Mimico	30.00	224.1	49,421.62	1,897.70	1,340.32	504.73	3,742.75	1,971.84	5,714.59	3,194.52	.....	2,520.07	* .....
Dundas	16.00	281.5	23,170.78	821.51	347.86	516.31	1,685.68	2,476.97	4,162.65	5,112.34	949.69	.....	* .....
Hamilton	16.00	3652.2	313,689.97	11,177,05	5,968.22	5,430.32	22,575.59	32,134.74	54,710.33	66,939.10	12,228.77	.....	.....
Waterdown	26.00	48.3	11,080.34	423.42	139.87	114.38	677 67	425.10	1,102.77	1,240.28	137.51	.....	.....
Caledonia	29.10	28.9	4,079.35	144.61	47.27	42.87	234.75	254.15	488.90	809.14	320.24	.....	.....
Hagersville	33.21	152.4	37.148.37	924.26	270.07	226.19	1,420.52	1,341.00	2,761.52.	1.569.87	.....	1,191.65	* .....
Guelph	22.00	1580.4	189,687.94	7,475.15	2,166.76	3,510.21	13,152.12	13,906.46	27,058.58	34,825.19	7.766.61	.....	.....
Acton	36.00	59.4	21,971.26	744.43	273.10	169.73	1,187.26	522.80	1,710.06	1,741.22	31.16	.....	.....
Rockwood	38.00	27.5	11,438.32	262.17	87.23	80.61	430.01	242.03	672.04	214.44	.....	457.60	* .....
Georgetown	36.00	87.6	53,491.29	1,156.37	363.70	229.86	1,749.93	769.68	2,519.61	655.44	.....	1,864.17	* .....
Preston	21.50	1036.7	126,037.99	4,792.70	1,330.55	1,593.97	7,717.22	9,121.03	16,838.25	24,503.90	7,665.65	.....	.....
Galt	22.00	1129.4	149,739.92	5,913,55	1,618,71	1,740.66	9,272.92	9,938.07	19,210.99	27,299.17	8,088.18	.....	.....
Hespeler	23.00	317.3	42,501.86	1,678.78	534.32	515.65	2,728.75	2,791.79	5,520.54	7,604.67	2,084.13	.....	.....
Berlin	22.50	1357.2	186,372.86	7,358.94	1,903.28	2,670.05	11,932.27	11,941.70	23,873.97	30,538.14	6,664.17	.....	.....
Waterloo	23.50	427.3	63,662.05	2,515.96	674.59	818.76	4,009.31	3,759.72	7,769.03	10,042.35	2,273.32	.....	.....
New Hamburg.	32.00	137.7	43,428.62	1,696.84	1,483.19	311.30	3,491.33	1,211.59	4,702.92	4,890.67	187.75	.....	.....
Baden	37.00	53.9	18,066.53	639,55	407.86	125.32	1,172.73	474.25	1,646.98	2,001,71	354.73	.....	.....
Stratford	30.00	697.7	149,221.13	5,919.06	1,637.11	2,318.28	9,874.45	6,138.90	16,013.35	20,930.00	4,916.65	.....	.....
Seaforth	40.00	194.9	83,699.43	3,303.34	949.04	667.85	4,920.23	1,714.88	6,635.11	8,022.54	1,387.43	.....	.....
Mitchell	37.00	180.9	57,470.08	2,266.18	861.87	609.69	3,737.74	1,591.70	5,329.44	6,692.37	1,362.93	.....	.....
St. Mary's	29.50	1640.5	377,197.95	14,949.34	3,533.05	3,927.54	22,409.93	14,434.39	36,844.32	49 755.56	12,911.24	.....	.....
Woodstock	23.00	823.3	119,520.85	4,717.97	1,112.33	1,847.71	7,678.01	7,244.03	14,922.04	19,059.06	4,137.02	.....	.....
Ingersoll	25.50	468.6	91,475.69	3,624.07	2,136.90	1,136.72	6,897.69	4,123.11	11,020.80	12,440.39	1,419.59	.....	.....
Tillsonburg	32.00	191	70,907.83	2,778.69	752.79	498.65	4,030.13	1,686.57	5,710.70	6,233.68	522.98	.....	.....
Norwich	32.00	92.7	33,252.28	1,312.12	596.88	306.75	2,215.75	815.64	3,031.39	3,109.04	77.65	.....	.....
Beachville	31.00	84.7	19,675.09	778.20	463.68	285.19	1,527.07	745.26	2,272.33	2,624.39	352.06	.....	.....
London	24.00	3076.1	519,254.08	20,482.25	4,368.63	5,093.36	29,944.24	27,065.95	57,010.19	74,800.58	17,790.39	.....	.....
St. Thomas	29.00	1495.5	358,135.39	14,140.71	2,923.41	3,446.81	20,510.93	13,158.51	33,669.44	43,119.64	9,450.20	.....	.....
Port Stanley	9.+ 243.67	91.6	45,670.03	1,811.97	561.21	247.69	2,620.87	806.03	3,426.90	4,279.19	852.29	.....	.....
Totals	.....	37165.1	4,693,313.81	180,250.55	52,779.84	57,214.39	290,244.78	327,007.47	617,252.25	751,191.66	141,062.12	7,122.71	133,939.41

* Municipalities connected during 1913—first year's operation.

PORT ARTHUR SYSTEM

The progress of the Port Arthur System has been very satisfactory during the past year, and the outlook for the coming year is very promising indeed.

The percentage of interruptions for the year was very small and no failure of apparatus in the substation has occurred.

The new extension to this same station is practically completed and a number of improvements have been made in the original part of the station, which add considerably to the efficiency and the appearance of the station.

On September 20th, 1913, the new 22,000 volt line from the substation to the new Government grain elevator was made alive and found to be in first-class operating condition.

The load taken by this elevator is in the neighborhood of 1,000 h.p. at the present time with prospects of a big increase in the near future, as the installed capacity of the elevator substation is nearly 2,250 h.p.

Another important load operated from the substation will be that of the Port Arthur Elevator Company, which operates the C.N.R. elevator. This company have signed a contract with the City of Port Arthur for 400 h.p. and the construction of the line to this elevator is being pushed forward with all possible haste.

With the continuance of the growth of the System in Port Arthur, the power demand of Port Arthur through the Commission, exclusive of the municipal plant at Current River, will no doubt be considerably increased during the coming year.

The capital investment for the Port Arthur System to October 31st, 1913, is as follows:—

Transformer Station	$73,076 07
Transformer Lines	15,801 29
Interest during Construction	1,547 90
Grand total	$90,425 26

The operating and maintenance expenses from October 31st, 1912, to October 31st, 1913, are as follows:—

Interest	$3,242 09
1.8 per cent. Sinking Fund	1,458 93
Operation Costs	3,324 96
Cost of Power	31,367 08
	$39,393 06

A financial statement of operation from October 31st, 1912, to October 31st, 1913, is given below:—

Sum of monthly loads delivered and value, including charges for Administration, General Expense, Operation, Interest, Sinking Fund, and Depreciation	23,530 h.p.	$41,716 01
Sum of monthly loads purchased and value, including Administration, General Expense, Operation, Interest and Sinking Fund	23,530 h.p.	39,393 06
Surplus applicable to Depreciation Fund		$2,322 95

SEVERN SYSTEM

At the beginning of the past fiscal year there were but two municipalities, namely, Midland and Penetang, being supplied with power from the Severn System.

At the present time, however, the number of municipalities has been increased to seven, which indicates the growth of the Severn System during the past year.

The new municipalities now taking power from the Severn System are Collingwood, Barrie, Coldwater, Elmvale and Stayner.

The power required by the addition of these municipalities has raised the Commission's demand from the Simcoe Railway and Power Company, whose plant is located at Big Chute on the Severn River, about nine miles from a point where the Severn River empties into the Georgian Bay, to over double what it was last October, and thereby lowered the price to the municipalities due to the automatic reduction according to the terms of the contract.

The present total demand is 1,233 h.p. and the prospects are very bright that this amount will be again doubled in the coming year.

The operation of this System is carried on at the present time by means of a co-operative system between the municipalities and the Commission. The Commission employs a System Operator and Line Superintendent who is stationed at Waubaushene Junction, and who directs the general operation and line maintenance over the System. The System Operator acts in conjunction with the Chief Operator of the Power Company who is located at the Midland substation, and thus the whole System is operated as a unit.

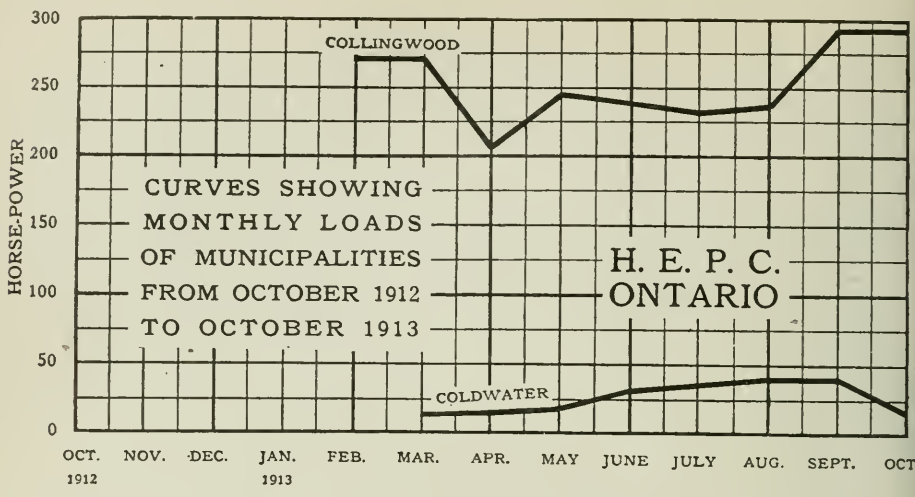
An agreement was arranged between the Commission and the municipalities whereby they would at any time furnish extra men to help the permanent staff on patrol and line repairs. Under the System Operator there are two patrolmen, located one at Elmvale and one at Stayner. With these two patrolmen located centrally on the System, and with the help which is furnished when necessary by the municipalities the Commission are able to keep the System in good operating condition.

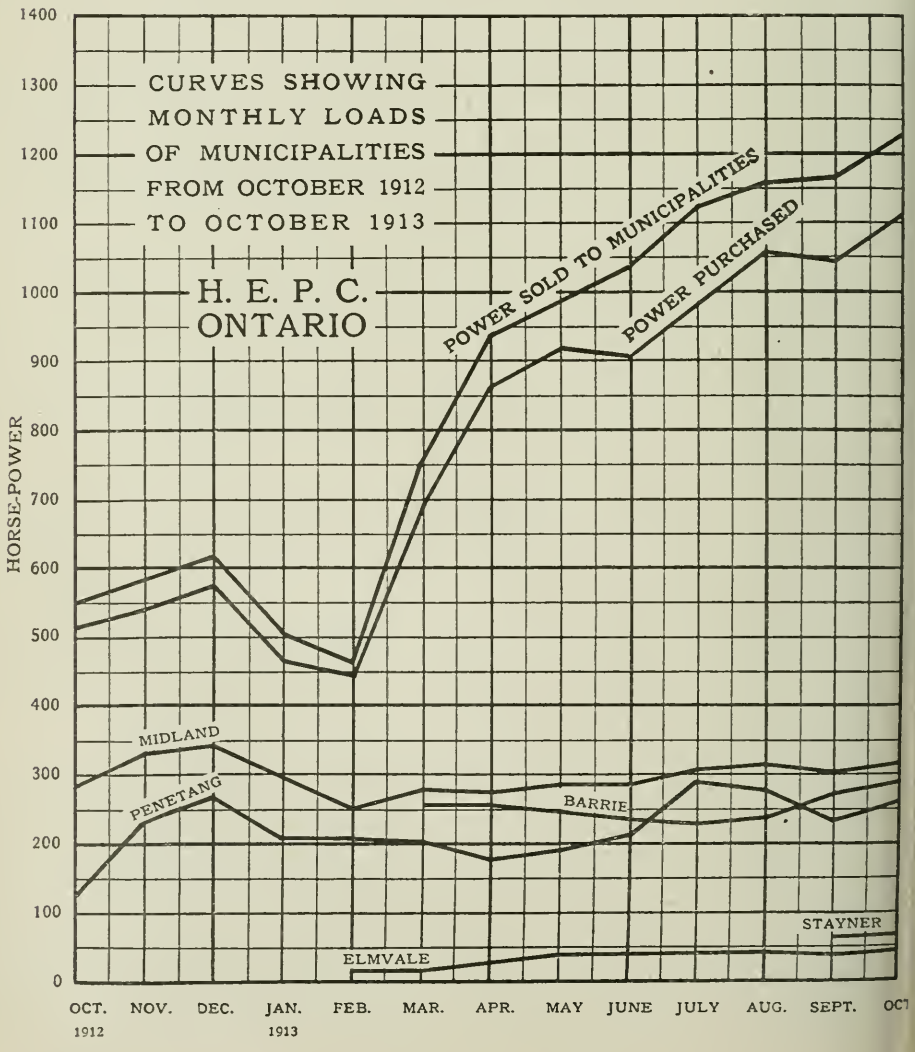
This system of operation and patrol has been found to work out very satisfactorily to the municipalities, to the Commission and to the Power Company.

The initial operation of this System was over a single circuit, 3 phase line to the different municipal substations. During the year the lines on this System have been double circuited. The necessary switching equipment for the lines on this System is being manufactured and when installed will add much to the efficiency of the operation and maintenance of power supply over this System. The addition of the switching equipment will give the choice of two lines throughout the System for the power supplied to the different municipalities.

The Simcoe Railway and Power Company are completing arrangements to dam the outlets from the Six Mile Lake to the Severn River, between the Big and Little Chutes. This work, along with other work carried out by the Power Company during the year, will give much better control of the water in connection with the operation of the plant during the spring freshet, which at times is fairly severe on this river.

The Power Company have also added to their power house equipment switching and transformer apparatus in order that they might be in a position to give the extended Severn System lines efficient service.


COLLINGWOOD
CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
COLDWATER
HORSE-POWER
300
250
200
150
100
50
0
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.


CURVES SHOWING
MONTHLY LOADS
OF MUNICIPALITIES
FROM OCTOBER 1912
TO OCTOBER 1913
H. E. P. C.
ONTARIO
POWER SOLD TO MUNICIPALITIES
POWER PURCHASED
MIDLAND
PENETANG
BARRIE
STAYNER
ELMVALE
HORSE-POWER
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
OCT. 1912
NOV.
DEC.
JAN. 1913
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT

A list of the municipalities connected to the Severn System during the past year is given below:—

Municipality	Date Connected	Initial Load in h.p.	Present Load in h.p.	Increase in h.p.
Collingwood	Feb. 24th, 1913	274.5	288	13.5
Barrie	April 10th, 1913	254.5	288	33.5
Elmvale	May 27th, 1913	33.5	33.5	.....
Stayner	Sept. 25th, 1913	50	55	5
Coldwater	Feb. 24th, 1913	13.5	18.5	8

The capital investment for the Severn System to October 31st, 1913, is as follows:—

Midland Capital Cost Paid Up.

Penetang Capital Cost, October 31st, 1913.

Transmission Line	$9,136 71
Transformer Station	6,016 50
Total	$15,153 21

The maintenance and operating expenses from October 31st, 1912, to October 31st, 1913, are as follows:—

Cost of Power	$3,965 83
Interest	602 55
Sinking Fund	607 09
Operation Costs	99 96
Total	$5,275 43

A financial statement of operation from October 31st, 1912, to October 31st, 1913, is given below:—

Sum of monthly loads delivered and value, including charges for Administration, General Expenses, Interest, Depreciation and Sinking Fund	2,797	h.p.=$6,323 84
Sum of monthly loads purchased and value, including Administration, General Expenses, Interest and Sinking Fund	2,775.5	h.p.= 5,275 43
Surplus applicable to Depreciation Fund	21.5	h.p.=$1,048 41

ST. LAWRENCE SYSTEM

The Eastern, or St. Lawrence System operated by the Hydro-Electric Power Commission of Ontario, extends from Morrisburg, where the Commission buy power from the Rapids Power Company, in westerly and northerly directions. The power lines run along the river from Morrisburg in a westerly direction a distance of 23 miles to Prescott, Ontario, and in a northerly direction as far as Winchester, a distance of 18 miles, and are at the present time being extended to Chesterville and Russell, about 18 miles further.

These lines are located so that they can be easily tapped for a power supply for the different municipalities in this district.

The plant of the Rapids Power Company is situated on the Canal at Morrisburg. Current is generated at 2,200 volts, 60 cycle, 3 phase, and is carried under the canal in an armoured cable to the stepup station. The voltage here is stepped up to 26,400 volts and the supply of power for the System is taken from the high tension side of the stepup station.

To date Prescott has shown a favourable increase per month. Prescott's distributing station is built alongside their old power house and now that Prescott has a supply of Hydro power they are taking the necessary step to remodel their old equipment to bring it up-to-date so that they will have an auxiliary steam operated outfit which can be operated in conjunction with the Hydro supply in case it is needed.

TOTAL CAPITAL COST TO OCTOBER 31st, 1913

Following is a statement of expenditures on capital account, including Niagara, Port Arthur, Severn, St. Lawrence, and Renfrew Systems, also Municipal Construction (chargeable), Stock on hand and Tools; together with Expenditures on behalf of Province and value of assets on same account.

Niagara System

Transmission Lines

Right-of-Way	$564,345 20	
Steel Tower Lines	1,783,786 13	
Telephone Lines	129,681 69	
Relay System Lines	54,537 32	
Conduit System, Ontario Power Co. to Niagara Station	47,924 92	
		$2,580,275 26
Right-of-Way—Windsor Extension	41,578 04	
Steel Tower and Telephone Lines—Windsor Extension	111,691 96	
		153,270 00
Wood Pole Lines in operation	586,633 79	
Wood Pole Lines in course of Construction	181,280 69	
		767,914 48
Rural Line Construction		35,882 71
Welland District Lines		8,066 33
		$3,545,408 78

Transformer Stations

Stations in operation	$1,511,340 85	
Stations and Extensions in course of Construction	60,443 19	
		1,571,784 04
Distributing Stations in Operation	$65,811 19	
Distributing Stations in course of Construction	7,854 97	
		73,666 16
		$5,190,858 98

Other Systems

Port Arthur Capital Cost

Transmission Line	$15,801 29	
Transformer Station	64,249 49	
Extension to Station in Construction	10,374 48	
		90,425 26

Penetang Capital Cost

Transmission Line	$9,136 71	
Transformer Station	6,016 50	
		15,153 21

St. Lawrence System

Transmission Lines in Operation	$53,219 95	
Transmission in Construction and not operating	37,175 60	
Distributing Stations in Operation	2,906 09	
Distributing Stations in Construction	5 00	
Preliminary Survey on Steel Tower Lines	359 38	
		93,666 02

Severn System

Transmission Lines	$194,185 57	
Distributing Stations	26,029 47	
		220,215 04
Wasdell Falls Power Development, Site and Construction		14,414 04
Wasdell District Wood Pole Lines, Engineering and Estimates *re* Proposed Construction		317 19
		$234,946 27

Renfrew System		
Round Lake Storage Dam Construction		17,761 88
Municipal Construction Chargeable		
Various Municipalities	$121,340 72	
Right-of-Way—Toronto Entrance	1,544 70	
		122,885 42
Storehouse		
Toronto Storehouse, Testing Laboratory, Garage and Machine Shop	50,322 25	
Dundas Storehouse	1,581 36	
		51,903 61
Stock and Tools		
Line and Station Construction—Stock on hand	$56,268 76	
Line and Station Maintenance—Stock on hand	15,976 78	
Line Construction, Tools and Camp Equipment	2,715 86	
		74,961 40
General Expense Accounts (Capitalized)		
Automobiles	$10,520 00	
Unexpired Insurance, autos	1,229 64	
Unexpired Insurance, employees	1,748 65	
Office Furniture and Equipment	7,175 42	
Stationery, Cameras, etc.	2,488 85	
		23,162 56
Total capital expenditures		$5,915,724 61

PROVINCIAL EXPENDITURES

Provincial Account for Fiscal year, 1912-13

Engineering assistance to Municipalities, advising on construction of distribution systems, estimating rates and accounting, including travelling expenses	$69,290 97
Hydrographic surveys, reports on stream flow and power sites for the Province	29,663 23
Rules and regulations for the installation of systems for the utilization of electrical energy	6,412 16
Practical demonstrations of the use of electrical energy on the farm, also in connection with Rural and Urban Exhibitions	7,079 72
Shop and development work on the improvement of apparatus, also testing of instruments and equipment, including lamps and meters	4,229 19
Illuminating engineering investigations, general and specific	597 03
Gathering of data and statistics for the compilation of the Annual Report, including General Publicity and European Report	5,120 67
Gathering of data and statistics, and preliminary surveying in connection with the projected construction of electric railways	9,814 81
Engineering assistance to Department of Public Works, including expenses of Engineers	627 63
	$132,835 41

Capital Expenditures

Equipment for farm and rural demonstrations	$2,066 02	
Instruments, Hydraulic Department	3,152 50	
Instruments, Electric Railway Department	538 18	
		5,756 70
Total expenditure		$138,592 11

EXPENDITURES DURING FISCAL YEAR ENDING OCTOBER 31, 1913

Niagara System

Right-of-Way, including extension from St. Thomas to Windsor	$ 63,834 39	
Steel Tower Lines, including extension from St. Thomas to Windsor	103,391 36	
Telephone Lines	12 74	
Niagara Conduit System	7,017 04	
Wood Pole Lines	271,276 38	
Wood Pole Lines, Welland District	8,066 33	
Rural Line Construction	35,882 71	
Transformer Stations and Extensions	248,977 31	
Distributing Stations	35,862 36	
		$774,320 62

Severn System

Penetang Cap. Cost, including Line and Station	$ 140 46	
Trans. Line and Stations connecting Collingwood, Barrie, Coldwater, Elmvale and Stayner	190,703 53	
		190,843 99

Wasdell Falls District

Power Development Site and Construction	$ 14,414 04	
Transmission Lines connecting Beaverton, Cannington, Gamebridge, Brechin, Woodville and Sunderland	317 19	
		14,731 23

Port Arthur System

Extension to Station	14,363 77

St. Lawrence System

Transmission Lines and Distributing Stations connecting Morrisburg, Prescott, Winchester and Chesterville, and surveys	87,041 72

Renfrew System

Round Lake Storage Dam construction, Right-of-Way and Flood privileges..	12,992 18

Miscellaneous

Municipal Construction chargeable to various Municipalities	105,840 75
Toronto Storehouse	50,322 25
Dundas Storehouse	1,581 36
Line Construction, Station and Maintenance, Stock on Hand	58,207 74
General Expense Accounts (capitalized)	23,162 56
	$1,333,408 17

CHAPTER IV

MUNICIPAL WORK

MUNICIPAL ADVICES

Municipal Department

The Municipal Department is employed to secure the necessary information for the preparation of estimates on the cost of supplying power to those districts desiring it, through data collected by surveys of the districts and investigations of the possible power demands. These investigations are made, and estimates submitted, at the request of the municipalities desiring power. After a contract for a supply of power has been made between the Municipality and the Commission, the latter acts as consulting engineer when so requested, and is expected to prepare engineering plans, specifications, call for tenders, and supervise the erection of the necessary material and apparatus. Later, after power is delivered, this Department aids the municipality in building up its power load by acting as a power solicitor, and advising the town and consumers regarding the amount of power necessary and the proper electrical equipment.

The standardization of apparatus, unification of rates, and the inauguration of standard accounting systems are also under the direct supervision of the Municipal Department, which is also expected to give advice on questions of an electrical nature at the request of any municipality in the province.

The Rates in use in the Municipalities served by the Commission, for the years 1912 and 1913, and also the Cost of Power to those Municipalities will be found on pages 156 to 162 of this report.

The results of the year's Operation in the Municipalities will be found in "Operation of the Systems," pages 61 to 82, and in "Municipal Accounts," pages 136 to 155 of this report.

The work accomplished by this Department during the period covered by the report is given in detail in what follows; the municipalities being arranged in alphabetical order:—

Acton

The reconstruction of the Acton distribution system to adapt it for use with Hydro power commenced early in December, all work being carried on under the supervision of this Department. The whole system which was old and badly in need of repair was rebuilt, a greater portion of the same being replaced by new materials. The old street lighting system had to be replaced completely, new brackets, wire and other equipment being installed to give an efficient system of lighting on all streets. New circuits were also run to take care of prospective power users.

The Acton line and station was connected on December 14th, 1912, and single phase power was given to the town temporarily for lighting purposes while their system was being overhauled. This work was practically completed in Acton by February 1st, 1913, after which three-phase service was given.

In addition to supervising the reconstruction of their distribution system, assistance was also given in connection with various details of management and of rate application, a number of prospective power users being interviewed to secure additional load for the town system.

Although this was a municipal plant before the contract was made with the Commission, the number of lighting consumers has increased very greatly during the 9½ months of operation under the new system. There are several power consumers, and although the amount of power used is comparatively small, it works in well with the lighting load, giving a good load factor.

Ailsa Craig

To ascertain the most economical method of serving Ailsa Craig, a number of estimates were made of the cost of transmitting power to this Municipality together with others lying close to it, including Granton, Lucan, Parkhill, Zurich, Hensall, Dashwood, Exeter Crediton, and Thedford. Various schemes have been considered using both London and St. Marys as distributing points. With the present load conditions in this district, no advantageous proposition has as yet been found.

Alliston

A resolution was received in December, 1912, from the Council of the Town of Alliston asking for an estimate of the cost of 150 h.p. delivered to that Municipality. An estimate was accordingly prepared, it being assumed that Tottenham would also take 150 h.p., but under these conditions the cost was found to be high. In July a representative visited Alliston, Beeton, Tottenham and Orangeville to make a study of their load conditions, and reported the following loads as the probable requirements of each place:—

Alliston	200 h.p.
Beeton	75 h.p.
Tottenham	50 h.p.
Orangeville	800 h.p.

Estimates are being prepared of the cost of supplying these quantities of power, including 100 horse power to Grand Valley.

Alvinston

A representative visited Alvinston who made a complete study and report on the power situation there, and on the probable requirements in case the Town entered into the Power Union. He advised that 165 h.p. was being used in the Town and that a probable load of 100 h.p. could be obtained for a Municipal Hydro-Electric System.

Amherstburg

Amherstburg was visited and the different manufacturers interviewed to obtain particulars in regard to the power used by each. It was reported that 375 h.p. was being used in the Town, which quantity would probably be increased to 420 h.p. in the near future. With the Town taking Hydro power they would have a probable load of 150 h.p.

The proposition of serving Amherstburg is being considered in estimates at present in hand of the cost of serving the various towns and villages in Essex County from the Essex high tension transformer station.

Ancaster Village

During the third week of November, 1912, a resolution was passed by the Police Village of Ancaster, asking for an estimate of the cost of power to that Municipality. No definite quantity having been stated, a representative visited the village soon after this, who reported their present probable requirements as 40 h.p. Estimates were then prepared of the cost of transmitting power to them, and in April, 1913, they were advised that the cost of different quantities of power, delivered at a voltage suitable for local distribution, would be as follows:—

40 h.p. — $31.55 per h.p. per year.
75 h.p. — $25.05 per h.p. per year.
100 h.p. — $22.95 per h.p. per year.

Appleby

See report on Nelson Township.

Aurora

On December 7th, 1912, a letter was sent to the Town Clerk of Aurora giving estimated costs of $24.97 per h.p. per year for 500 h.p. and $26.29 for 300 h.p., the power to be delivered at 13,200 volts. Power at 44,000 volts was, however, recommended in preference to the above, a rate of $26.78 per h.p. per year for 300 h.p. being given for power at this voltage.

Consequent to this the Town Council also considered a proposition submitted to them by a power transmission company, which latter proposal was believed by them to be the more desirable. Accordingly on June 30th they carried a by-law authorizing an agreement with the transmission company.

Ayr

A resolution having been received from the Council of the Village of Ayr, asking for an estimate of the cost of transmitting 100 h.p. to them, a number of estimates were prepared in an endeavor to find the most economical means of service. With Ayr taking power alone an advantageous proposition could not be given, so the Department was asked to interest other municipalities in that district. With this end in view a representative visited these towns and addressed meetings in reference to Hydro-Electric power. As a result the enabling by-law was carried in a number of places in July, it being carried in Ayr by a large majority. A study is now being made of the proposition of serving the municipalities as a group, and estimates are in the course of preparation.

(See report on Blenheim Township).

Baden

During March, 1913, a number of prospective power customers were interviewed on behalf of the Village with the result that a contract was signed in April by one manufacturer for over 150 h.p. 24 hour power, and by others for smaller amounts. Owing to this increased load, a substantial reduction of rates to power consumers was recommended.

Early in June changes were made in their local distribution system, since the sub-station transformer connections had to be changed to give 4,000 volts, so that Petersburg and St. Agatha could be served from this point.

Extensions were also made in the local distribution system to take care of the new power consumers, the Department acting in an advisory capacity. Assistance was given the new power consumers in choosing their electrical equipment and laying out their installations.

It is of interest to note that two years ago Baden entered into an agreement for the supply of 40 h.p. For the last month of this year they have taken 165 h.p. and with the completion of the motor installations at present in hand it is expected that their demand will reach 200 h.p.

Barrie

The Commission, acting in the capacity of Consulting Engineers for the Town, called for tenders for their sub-station transforming and switching equipment, and after contracts were let and materials had arrived, supervised its installation. Power was received on April 14th, when the inauguration of Hydro-Electric power was celebrated by a public meeting and a demonstration.

Assistance has been given the local Commission in obtaining new power users, and the officials were instructed in the use of the schedule of rates recommended for their use.

The street lighting system was overhauled and construction work started on the installation of 500 additional lamps with new transformers to take care of them, special lighting having been placed on the main street. Assistance has been given in planning this work.

It was proposed by the local authorities to do away with the existing water-works' pumping station, and install pumps at their transformer station, thereby effecting economies. The Commission was asked to advise on this matter, and after the question was gone into thoroughly, recommendations were made along the lines suggested. These recommendations met with the approval of the Town and tenders have been called for covering the equipment required.

Beachville

During the year a representative visited Beachville at regular intervals and advised them on various questions of management, in addition to assisting them in obtaining power load and laying out extensions to their local distribution system to give the required new service.

Beachville load has increased during the year from 27 h.p. to 100 h.p., while their business has been placed on a substantial paying basis. Their original contract calls for the supply of 80 h.p.

Beamsville

See Report on St. Ann's District.

Beaverton

As a result of the meetings held in the different towns and villages in Ontario County during the summer and fall of 1912, the Village of Beaverton carried the enabling by-law on November 18th by a large majority, the vote being 154 for and 3 against.

Soon after this an inventory was taken of the local distribution system and plant and a valuation made of it. An estimate was also made of the cost of new work and reconstruction within the Village to adapt their old system for the use of Hydro-Electric power. The Corporation was submitted a recommendation that $10,000.00 be raised to take care of this work. Representatives of the Commission addressed ratepayers' meetings during December in reference to Hydro-Electric matters, explaining the various points of interest in connection with their money by-law on which a vote was about to be taken. This by-law to authorize a debenture issue for $10,000.00 to be expended for an electric distribution system was carried almost unanimously early in January, 1913.

A contract for the supply of 250 h.p. at 2200 volts and at an estimated cost of $32.71 per h.p. per year was drawn up and submitted to the Corporation, which was signed.

Beaverton is to get its supply of power from Wasdell's Falls on the Severn River where development work is at present going on. Preparations are being made to have the sub-station and municipal distribution system as well as transmission lines finished in time to receive power upon the completion of the Wasdell's Falls plant.

Beeton

A resolution asking for an estimate of the cost of transmitting 150 h.p. to the Village of Beeton was received. The question of supplying this power is being taken care of in the study of the conditions in the municipalities in this neighborhood. (See Report on Alliston.)

Belmont

In response to a request for information as to the procedure to be followed to obtain a supply of Hydro-Electric power, a representative was in Belmont during April who gave the Village Trustees the instructions desired. While there, a study was made of the local power conditions, a report on which placed the probable demand of the village at 50 h.p. in the event of their installing a Municipal Hydro-Electric System.

Belle River

A representative visited Belle River and reported that a total of 120 h.p. was being used there, which quantity it was expected would increase to 185 h.p. In the event of the Municipality contracting with the Commission for a supply of power, a probable load of 75 h.p. could be obtained for a Municipal Hydro-Electric System.

Estimates of the cost of power to Belle River have been prepared in connection with the proposition of supplying the towns and villages in Kent County from the high tension transformer station at Chatham.

Berlin

During February a representative was in Berlin who obtained data in regard to their various power users, and a complete study was made as to the result that would be obtained by the application of the new schedule of rates that had been recommended to them. A number of conferences were held with officials of the Municipality, after which it was decided to adopt the rates as recommended.

Assistance was also given the Municipality in obtaining a contract with a prospective consumer for a large block of power, and engineering advice was given in regard to making additions to their local distribution system to serve this cus-

tomer. A number of conferences were held in connection with this work, representatives of the Commission also visiting Berlin a number of times to take care of various details that had to be handled locally,

The question of rates to be charged to residents of Bridgeport, a suburb of Berlin, was referred to this Department for attention, and instructions were given that were acted on by the local Commission.

The Commission was requested to advise the local authorities on the question of the Municipality purchasing the plant of the Berlin Central Heating Company, to be used as a reserve source of power or a peak load-station. A careful inspection was made of this plant and all details examined both from the physical and from the financial standpoint. A complete report was made on the situation and recommendations sent to the local Commission.

At the city's request the question of redesigning the municipal sub-station and feeder system, to increase the protection to their circuits and to provide for future growth has been taken up. It is also proposed to install voltage regulators on the lighting circuits. Preliminary work in connection with this proposition is in hand, this Department working in conjunction with the local Superintendent.

A very satisfactory growth in business has taken place during the past year, and there is every prospect of further growth both from new industries locating in Berlin, and from industries now using steam or part Hydro power. A corresponding growth has taken place in the municipal load which during 1912 was 1,206.5 h.p. During the present year this has been increased to 1,468 h.p. With the addition of the loads at present being connected it is expected their demand will exceed 1,600 h.p.

Blenheim

A representative was in Blenheim who made a complete survey of the power situation in that Municipality. He reported that 325 h.p. was being used, which amount would be increased to 465 h.p. in the near future. Should the Municipality enter into a contract for a supply of electric power, a load of approximately 150 h.p. could be obtained for a Municipal Hydro-Electric System.

The proposition of supplying Hydro power to Blenheim is being considered in connection with the other municipalities in Kent County.

Blenheim Township

In compliance with a request from the Clerk of the Township of Blenheim, forwarded to the Commission during April, a representative visited the Township in the early part of May. While there he addressed a number of meetings on the question of Hydro Power, outlining the procedure to be followed to obtain a supply, and also made a survey of the power requirements of the villages within the Township. It was reported that the following quantities of power were required by these villages:—

Drumbo	23½ h.p.
Plattsville	77 h.p.
Princeton	25 h.p.

Bothwell

The power conditions in Bothwell were investigated, and it was reported that 300 h.p. was being used, and that there was a possibility of this load being increased to 330 h.p. in the near future. The possible load for a Municipal Hydro-Electric System was reported as approximately 150 h.p.

Estimates of the cost of Hydro Power to Bothwell, supplied from the high tension transformer station at Chatham, have been prepared. These will be submitted to the Municipality in the near future.

Bobcaygeon

The local plant having been destroyed by fire in December, the Commission's advice and assistance were sought for the purpose of obtaining a supply of electricity at the earliest possible date. A representative went to Babcaygeon immediately, who advised them of a possible means of obtaining a temporary supply of power, and also obtained data whereby plans could be drawn up and materials ordered for the restoration of their plant.

In January the Board of Electric Light Commissioners forwarded a resolution that the Commission be asked to take care of the restoration of their Electric Plant and also give them any further assistance they might require.

A study was made of their conditions and recommendations made in regard to changes necessary in their street lighting system. Plans were also drawn up for a new generating station and equipment, and supplies ordered for them. After their equipment had arrived the Commission made the installation and turned the plant over to the town in complete operating condition.

Bismark

See Report on St. Ann's District.

Bradford

Meetings were held in this place at which representatives of the Commission were present and explained the method of procedure necessary to obtain a supply of Hydro-Electric power. An estimated cost of $43.24 per h.p. per annum being quoted.

In view of possible delay in furnishing Hydro-Electric power to Bradford, the Commission suggested in March that a second-hand generator might be purchased and belted to some steam engine in the village so that current could be supplied temporarily.

Brampton

During the year Brampton was given considerable assistance in soliciting new power consumers and in laying out extensions to their Municipal System to serve them. Their load has shown a steady healthy growth, their demand having increased from 373.5 h.p. in 1912 to over 500 h.p., and with the addition of the load to be taken by motors at present being installed it is anticipated that an even greater increase will be shown in the coming months.

A schedule of rates was recommended to Brampton conforming with the standard form. This system of charge being different from that previously used, a number of conferences were held for the purpose of discussing them and to ascertain the effect they would have on consumers' bills. The rates as recommended were finally adopted by the town and put into force.

Brantford

In November an agreement was signed by the City of Brantford for the supply of 1,200 horse-power to the Municipality at an estimated cost of $19.50 per horse-power per year.

A Superintendent was appointed in December to take charge of all the work in connection with the installation of their transformer station and local distribution and street lighting systems. Under his supervision plans were put under way covering all this work, the Commission's Engineering Department acting in an advisory capacity. A great many points in connection with the work were discussed in detail and plans and specifications were prepared for the Municipality's transformer station and the underground street lighting system in the business section.

Construction work in Brantford is progressing rapidly, and will be ready for service upon the completion of the Commission's transformer station and transmission line.

Brantford Township

The Township Clerk forwarded a resolution, passed on April 10th, 1913, asking what steps should be taken to have streets in the suburban districts of the city of Brantford lighted, and to obtain current for the use of farmers. Instructions as to method of procedure were given at that time. Early in August a rural petition was received from the Township asking for rural power and lighting service. Conditions are being investigated and estimates are being made of the cost of giving the desired service.

Brechin

The enabling By-law was passed by the ratepayers of the Police Village of Brechin in November, 1912. Estimates were prepared of the cost of a distributing system for the Village, which were submitted, and on January 21st, 1913, a By-law carried authorizing an issue of debentures for $1,750 to cover this work.

An agreement covering the supply of 50 h.p. to the Village was drawn up and submitted. This agreement was executed in April.

Brechin will be served from the development at Wasdell's Falls on the Severn River.

Breslau

An agreement was drawn up and signed for the supply of 100 h.p. to a Brick Company located at Breslau, which power is to be supplied at 2,300 volts and at the rate of $35.00 per h.p. per year. A transmission line has been built from Preston, and a transformer station located in the village. Rural consumers in Waterloo Township will also be served from this line. (See Report on Waterloo Township.)

Brigden

A representative visited Brigden who reported that 235 h.p. was being used there, and that a probable load of 100 h.p. could be obtained for a Municipal Hydro-Electric System.

Bronte

Preparatory to asking the Council of the Township of Trafalgar to consider a by-law to get Hydro-Electric power for the Police Village of Bronte, a representative visited that Municipality to address ratepayers' meetings and instruct the Village Board on the steps to be taken. It was proposed to submit a by-law to the people at the January, 1913, elections, but owing to some misunderstanding the Township Council failed to give the by-law the necessary readings. Since then no further action has been taken on the part of the village.

Bright

Acting on a request from the Police Village of Bright, a representative visited that Municipality in April, 1913, and addressed a meeting of the ratepayers on Hydro matters, explaining the method of procedure to be followed to obtain a supply of power. He also made a study of the local conditions and reported the present power requirements of the village to be about 50 h.p.

Caledonia

Construction work on the Caledonia Village Distribution System was commenced in November, being carried on under the supervision of this Department. Work was completed during the next month to such an extent that electric service could be given to residences.

Assistance was given the Village in obtaining power consumers, and the officials were instructed in the various details of management and rate application.

Although Caledonia contract covers the delivery of 25 h.p., their demand to date has reached 27 h.p. and from present indications it is anticipated that this amount will be increased in the near future. In addition to the small amount of power taken by the Village, the Commission has a contract with a manufacturer outside the Village limits of Caledonia for 300 h.p. from which Caledonia benefits. The demand of this company has been automatically increased to 375.5 h.p.

Camden

See report on St. Ann's District.

Cannington

Following the preliminary steps reported in 1912, an enabling By-law was passed by the Village of Cannington by a majority of 136, three voting against.

It was arranged that the Village should take over the distribution system owned by a private company, and estimates were prepared of the cost of remodelling and reconstructing it for use with Hydro-Electric power. Acting on the advice of the Commission, a By-law to authorize an issue of debentures for $12,000.00 was submitted to the ratepayers in April, which carried by a majority of 117, there being 21 dissenting votes.

An agreement covering the supply of 175 h.p. to the Village was submitted and executed.

Power will be supplied to Cannington from the development at Wasdell's Falls, and it is planned to have their distribution system ready to receive power as soon as that work has been completed.

Cayuga

A request having been received from the Town of Cayuga, asking information as to the cost of transmitting Hydro-Electric power to them, and a similar request having been received from a local manufacturer as to the cost of 100 h.p. at Nelles Corners, near Cayuga, estimates were put in hand to ascertain the cost of this latter amount, with 50 h.p. delivered to Cayuga. It was found that under these conditions an advantageous proposition could not be given. It was decided that a more extensive study be made of this district before final estimates are submitted.

Chatham

Acting on requests from Chatham, a representative visited that municipality during February, who made a complete detailed report on the various power conditions existing there. This report covered the following headings:—

The franchise of the present Company.

The number of consumers and the service given to various classes of customers.

The source of power of the present Company, giving details of the cost of fuels, etc., load conditions on their plant and the rates in use.

Details of the generating plant and distribution system, with a valuation of the same.

The cost of generating power, using the present equipment.

Approximately 3,100 h.p. are being used for industrial purposes in Chatham. Many of the manufacturers generating their own power by means of gas engines, or by steam engines, using refuse and gas to fire their boilers.

Our representative also obtained data and reported on the municipal street lighting system and the water pumping system.

In April an estimate was made of the cost of reconstructing the present distribution system to adapt it for use with Hydro power, of the cost of remodelling their street-lighting system and of installing underground circuits with ornamental street lights in the business districts. It was estimated that $89,729.00 would be required for this work.

A request was received from the City of Chatham, instructing the Commission to enter into negotiations with the present Company in an endeavor to come to some arrangement whereby the municipality could buy out the company. A valuation has been made of the assets of the company and negotiations are at present in hand.

Chatsworth

A representative visited the Village of Chatsworth who reported that a probable load of 75 h.p. could be obtained there for a municipal Hydro-Electric System. (See report on Owen Sound.)

Chesterville

An estimate of the cost of a distribution system was forwarded to the Village in April, together with a recommendation that a by-law for $5,000 to cover the cost thereof be placed before the people. This by-law was accordingly submitted to the ratepayers on May 31st and carried, the vote being 111 for and 21 against.

A contract has been signed covering the supply of 50 h.p. to Chesterville at an estimated cost of $35.00 per h.p. per year. Construction work necessary to give this service is at present being rushed forward, and it is expected that power will be delivered within the very near future.

Clinton

In November, 1912, an agreement was prepared and forwarded to the Town of Clinton, which provided for the supply of 400 h.p. to that municipality at an estimated cost of $39.00 per h.p. per year. It was felt that 400 h.p. was rather too large an amount of power for this town to contract for, so after further investigation it was decided that a new form of agreement be drawn up. This latter agreement was submitted in March, 1913, covering the supply of 300 h.p. at an estimated cost of $41.00 per h.p. per year, which agreement was executed in May.

Single Light Park Standard, Goderich

Single Light Park Standards, Goderich

At a meeting held on December 16th, 1912, it was decided to submit a money by-law for 33,000.00 for the purchase of the existing plant, and remodelling it for the reception and distribution of Hydro-Electric power. A representative visited Clinton soon after this, who made recommendations as to changes to be made in their distribution system for the reception of this power, and also obtained data on which to base the design of a municipal transformer and distributing station.

Plans and specifications were submitted to the Town Council for approval, and orders have been placed for the equipment and supplies necessary to remodel and construct their system. Construction work has commenced under the supervision of this Department, and will be completed early in 1914. The new station apparatus is being placed in the Waterworks Building, and the operation of both systems will be under the supervision of one man.

Coatsworth

See Report on Merlin.

Coldwater

The Coldwater Municipal System was made alive on February 18th, 1913, after which continuous service was given.

Since that time they have been working up a power and lighting business, a representative having visited the village at various times to advise the local officials on any details concerning which they were in doubt. It is anticipated that during the coming year the electrical department of the Village of Coldwater will have been placed on a substantial basis.

Collingwood

The reconstruction and remodelling of the Collingwood local distribution and street lighting systems, which was started during the late summer of 1912 was completed early in the present year. Extensions were also made to take care of some new power consumers. All of this work was carried on under the supervision of this Department.

Power was first received in Collingwood on February 24th, that event being celebrated by a demonstration and official opening.

A representative has continued to visit Collingwood at regular intervals to advise them in the various details of management and give them any engineering advice they should desire. A number of prospective power users in the town have been interviewed on behalf of the local Commission with the object of soliciting additional load for the town system.

A large number of small power users have been connected to the Collingwood Municipal system and new lighting consumers have continued to come on at a rapid rate. Some contracts have also been signed for large quantities of power. Service will be given to these latter as soon as they have completed their motor installations. With the addition of these loads it is anticipated that the load taken by Collingwood will exceed the amount covered by their contract.

Comber

A representative visited Comber and reported that 295 h.p. was at present being used there, which amount would be increased to 325 h.p. in the near future.

The proposition of supplying Comber with power from the Kent high tension transformer station, along with other municipalities in that district, is now under consideration.

Crediton

See Report on Ailsa Craig.

Creemore

A resolution having been received from the Village of Creemore asking for an estimate on the cost of transmitting power to them, a representative visited the municipality and reported on the local conditions. He advised that a probable load of 50 h.p. could be obtained for a municipal Hydro-Electric System. An estimate is being prepared of the cost of delivering this amount of power to the municipality.

Dashwood

See Report on Ailsa Craig.

Dereham Township

A request for information and, later, a petition for power containing 45 signatures, were received in February, 1913, the petition calling for service for 111 horse-power and 730 lights. Another petition containing 156 signatures was received in March, the total service requirements being for about 1,760 lights and some 380 h.p. Additional petitions are being circulated in an endeavor to get applications to cover the whole Township. After these are received a study will be made of the conditions existing to ascertain the best means of giving this service. In the meantime a study is being made of those portions of the Township covered by the petitions already received.

Doon

The contract between the Doon Twine Co. and the Commission being executed in November, 1912, orders were placed for the necessary equipment and the construction of the line was commenced. This was completed and ready for operation in February, 1913. The Commission's engineers also acted in an advisory capacity for the company, assisting them in choosing their equipment and planning their installation.

Power was first delivered to this company in April, after which their contract was turned over to the Town of Preston who assumed all the responsibility of management and operation of the line over which this load is transmitted.

(See report on Preston).

Downie Township

A number of estimates were prepared covering different schemes of serving the various applicants in this Township. In connection with this work a representative visited the Township who noted the location of every petitioner.

Permission was given to the City of Stratford to extend their system to serve some residents in Sebringville until such time as the Township should take over the business. Construction work on the Sebringville line has been completed and the residents in this portion of the Township are now enjoying the use of Hydro-Electric power.

(See report on Stratford).

Dorchester North Township

In compliance with a request from the Township of North Dorchester, a representative addressed meetings of the ratepayers on Hydro-Electric power in rural districts. As a result of these meetings, rural petition forms were circulated which when received contained 307 signatures, requesting service for 2,796 lights and 462½ h.p. Estimates are being prepared for the cost of giving this service.

Dresden

A complete report was made on the power conditions in Dresden, giving details of the equipment in the municipal electric plant, the rates in use and the operating costs. It was reported that 440 h.p. was at present being used, which amount would be increased to 540 h.p. in the near future. In the event of the municipality contracting for a supply of power through the Commission, a probable load of 200 h.p. could be obtained for their municipal system.

Estimates of the cost of Hydro power to be supplied to Dresden from the Kent high tension transformer station have been prepared and will be submitted to the municipality in the near future.

Drumbo

It is noted in the report under Blenheim Township that the Police Village of Drumbo passed the enabling by-law. Soon after this a representative visited the village and obtained data on which to base an estimate of the cost of a distribution and street lighting system. This estimate will be submitted at an early date.

Dunnville

See Report on St. Ann's District.

Dundas

The question of building a line from Dundas to West Hamilton to give power and lighting service in that district was taken up. It was estimated that $8,000.00 would cover the cost of the necessary construction. The Town of Dundas expressed a desire to take charge of this business, and it was arranged they should do so, constructing the lines to give the necessary service. This work was carried out under the supervision of this department. The question of giving street lighting service in this district is now under consideration. (See report of West Hamilton.)

Owing to the rapid growth of the Dundas municipal load, the Commission, at the town's request, obtained tenders on 3-150 kv-a. 13,000/2,300/575 volt transformers, with a view to this size of transformers being installed in place of the existing 3-75 kv-a. transformers. As soon as these tenders were received they were submitted to the Dundas Commission with comments and recommendations. Orders have been placed for this equipment, which will be put into service with as little delay as possible.

During the latter portion of May and the first part of June, engineers in the employ of the Commission visited Dundas to make a complete inventory of the equipment of a private company operating there. This inventory was used as a basis of valuation to be used in arbitration proceedings between the company and the Town of Dundas. During these proceedings the Commission's engineers also appeared in the capacity of expert witnesses on behalf of the town.

Since the agreement between the town and the private company for street lighting is about to expire, and since the town proposes to take over this business at that time, assistance and advice were given in laying out a system of their own to be operated in conjunction with their power and lighting distribution systems.

Further assistance was given during the year in connection with various details of management. The Commission had recommended that their system of rates be changed, and in order to demonstrate the advisability of this, an analysis was made of their business, dealing with the load of each individual consumer. The rates as suggested were finally adopted.

The load in Dundas has shown a very satisfactory growth, their demand having increased from 127 h.p. taken in 1912, to 268 h.p. for the present year. In addition to this latter amount a demand of 389 h.p. has been created by manufacturers in Dundas supplied directly by the Commission, making a total demand for Dundas of 657 h.p. It is anticipated that their load will show a further increase in the immediate future. The Dundas contract covers the supply of 600 h.p.

Durham

A representative visited Durham who reported that a probable load of 200 h.p. could be obtained there for a Municipal Hydro-Electric system.

(See also Report on Owen Sound).

Eastwood

A representative visited Eastwood and reported on the power conditions there. It was reported that a probable load of 40 h.p. could be obtained there.

Elmira

An estimate of the cost of a distribution system was furnished by the Commission on November 9th, 1912, and a recommendation was made that $16,300 should be raised by debentures to cover the cost of this work. On the request of the village the existing privately-owned plant was valued by this Department. The question of taking over this plant was discussed at a meeting of the Council in December, one of the Commission's Engineers being present, and it was then decided to submit a money by-law in January, 1913, for $20,000.

The village arranged to purchase the local electric lighting plant and entered into a contract with the Commission for the supply of 200 h.p. at 2200 volts at an estimated cost of $38.00 per h.p. year.

The Council passed a resolution empowering the Commission to order materials, apparatus and equipment and to plan the local distribution system and also to construct the same. Materials were at once put on order and the construction of their local distribution was commenced on May 1st under the supervision of this Department.

During May, a representative visited Elmira who reported on their waterworks pumps, and made recommendations as to their future needs. Prices of pumping outfits were obtained and submitted.

Construction work in Elmira has been completed and was made alive on October 29th. Assistance is now being given the town in an endeavor to work up a power load.

Elmvale

The Police Village of Elmvale entered into an agreement with the Commission for the supply of 125 h.p. at an estimated cost of $31.00 per h.p. per year, power to be delivered at 2,200 volts, this being a voltage suitable for local distribution.

The work of reconstructing and remodelling their distribution system was carried out under the supervision of this Department, and power was first delivered on May 27th.

Assistance has been given to the Village trustees in connection with various details of management, rate application and soliciting of power consumers, a representative visiting the Village a number of times for that purpose.

Elora

A resolution was carried by the Council on February 10th, requesting the Commission to quote the cost of 100 h.p. per h.p. year. An estimate was accordingly prepared and submitted to the village showing that power could be supplied to both Elora and Fergus at the following figures:

Elora, 200 h.p.....$33.67 per h.p. per year
Fergus, 200 h.p.....$33.67 per h.p. per year
Elora, 100 h.p.....$52.06 per h.p. per year
Fergus, 100 h.p.....$52.06 per h.p. per year

During June a representative visited Elora making an inventory of the local distribution system, and obtained other data from which a valuation of the present plant was made and also an estimate of the cost of remodelling the system for the reception and distribution of Hydro power. The result of this valuation and estimate was forwarded to the Municipality in July, together with a suggestion that they submit a money by-law for $10,000.00 to cover their work.

A money by-law for the above amount and the enabling by-law will be voted on on November 3rd.

Essex

The Town of Essex was visited by a representative who reported on the power situation there and on the local electric light system. At that time 225 h.p. was being used in the municipality, which amount would be increased to 250 h.p. in the near future. Estimates of the cost of Hydro power supplied to Essex from the Essex high tension transformer station near Walkerville have been completed and will be forwarded to the Municipality at an early date.

Etobicoke Township

A number of petitions were received from Etobicoke Township requesting estimates on lighting, power and street lighting service to districts around Mimico and near Weston. These estimates were prepared and submitted to the Township Council, and after discussing the various propositions with the Township representatives, it was decided to give service to certain districts near Mimico. The construction work first decided on has been completed, having been carried on under the supervision of this Department, and service is being given. A number of extensions are contemplated which will be made in the near future.

All lines that have been constructed in this Township have been turned over to the Village of Mimico for operation and management, it being agreed that the Township shall have the liberty of taking them over at any time they should wish to do so, making them a portion of a township system.

Exeter

For the purpose of giving information on which to base a money by-law, a representative visited Exeter and obtained data from which a valuation of the existing plant was made and also an estimate of the cost of reconstructing and remodelling it for use with Hydro-Electric power. A complete report containing this valuation and estimate was submitted to the Village together with instructions as to preparing their money by-law, it being understood that the by-law would be submitted at the January, 1913, elections. No further action was taken by the Village in the matter.

(See also Report on Ailsa Craig.)

Fenwick

See Report on St. Ann's District.

Fergus

In preparing estimates of the cost of power to Elora, it was assumed that Fergus would take power also, and accordingly the figures submitted to Elora in March were sent to Fergus. (See Report on Elora).

Having been requested by the Municipality to do so, a representative visited Fergus during March making a study of their local conditions, and obtained data from which a valuation was made of their present system and an estimate of the cost of remodelling it for the reception of Hydro power. It was reported that 200 h.p. were required to fill their present needs.

In July the Municipality was advised to raise $16,000 to carry out the work required. A money by-law for this amount and the enabling by-law will be voted on on November 3rd.

Fletcher

See Report on Merlin.

Flesherton

A representative visited the Village of Flesherton who reported that a probable load of 125 h.p. could be obtained for a Municipal Hydro-Electric System, provided service was also given to Eugenia and Ceylon from this point.

(See Report on Owen Sound).

Finch

The question of supplying power to Finch was taken up in the study of conditions in the various towns and villages in the vicinity of Prescott. It was found that with the conditions existing and the small load required by Finch, viz., 50 h.p., an advantageous proposition could not be given them at this time.

Finch Township

An application was received from the Council of the Township of Finch asking for an estimate on the cost of power to the Village of Crysler. A study was made of this proposition, but owing to the limited power requirements in that district and the small amount required by Crysler, viz., 50 h.p., it was found that service could not be given at a reasonable cost.

Forest

A representative visited Forest during March and reported on the local conditions and on the present electric lighting system. The Town Council was advised in regard to the intended purchase of this system and also as to a power supply to fill their needs temporarily until such time as Hydro power would be available.

Fonthill

While at Fonthill for the purpose of addressing ratepayers of the Township of Pelham on the use of Hydro-Electric power in rural communities, a representative investigated the power requirements of that village. It was reported that a probable demand of 20 h.p. could be obtained for a village Hydro-Electric System, which if certain works that were being contemplated were carried out would be increased to 50 h.p.

(See Report on St. Ann's District).

Fort William

A communication from City Clerk of Fort William was received in January, asking for full information regarding the price of power to the City of Port Arthur and an interpretation of certain clauses in the contract with the Kaministiquia Power Company. They also requested that an Engineer be sent to investigate the local power situation and make a report on it. An Engineer was sent who reported in detail. This report was sent to Fort William, giving details concerning all matters regarding which inquiries were made.

A communication from the City Clerk was received in September requesting an estimate on the cost of supplying the City with 1,000 h.p. with a further supply of 1,000 h.p. each year for next four years, making a total at the end of four years of 5,000 h.p. at either 22,000 or 2,200 volts. Estimates in response to this request are being prepared and will be sent to Fort William in the very near future.

Galt

The town of Galt having agreed to supply the Grand Valley Railway with power, the question of drawing up a proper form of agreement for this power was referred to the Commission, and after terms had been settled to the mutual satisfaction of all parties, a contract was executed embodying them. Assistance was also given the town and the Company in choosing and laying out equipment to be installed to give the required service. After completion the installation was thoroughly inspected to see that it was placed in first-class condition before operation commenced.

A representative supervised the installation of their waterworks pumps and motors and gave such advice as was needed from time to time regarding the various details.

Tenders that had been received by the town for additional station transformer equipment were submitted to this department for comment, and recommendations were made and submitted.

Being desirous of removing the pole lines from some of their business streets and installing underground systems with ornamental street lights, an engineer spent some time in Galt in the early part of the summer looking over the local conditions and obtaining the necessary data. Suggestions and recommendations were carefully prepared which were submitted to the town for their consideration.

Other assistance was given the Town in connection with details of management, laying out extensions and soliciting new power consumers, a representative calling there at intervals for that purpose.

Their load has continued to show a substantial growth, the maximum load taken during the year being 1,025 h.p., while that in 1912 was 643.5 h.p.

Gainsboro Township

In January, 1912, the Council requested that an Engineer be sent to confer with them on the subject of Hydro-Electric power. This request was complied with by the attendance of a representative at the Township Council's meeting on March 10th at St. Ann's.

Georgetown

On November 11th, 1912, a vote of the ratepayers of Georgetown was taken on the necessary enabling and money by-laws for a supply of electrical energy by the Commission and for the building of a local distribution plant. Both these measures were carried by large majorities on December 23, 1912, after which an agreement was signed by the Municipality for the supply by the Commission of 200 h.p. of electrical energy at 2300 volts at an estimated cost of $36.00 per h.p. per year.

Plans for a complete distribution system for the transmission of electric light and power throughout the Municipality had, in the meantime, been prepared by engineers of the Commission, and these being satisfactory the municipality requested the Commission to purchase all necessary material and to proceed with the construction. The Commission also took up the question of the purchase by the Municipality of the existing local plant. After a number of conferences in which the Commission was requested by both parties to take part, an agreement was reached whereby the Town took over all that portion of the plant within the Corporation limits. Construction was started on April 13th, 1913, following out the original plans. As each section was completed the load was transferred to it and the old equipment removed from the streets. During this period and up to the time of turning on Hydro power, the local company continued to furnish power and to handle the business generally. These arrangements worked out very satisfactorily and there was practically no interruption of power during the period of construction. A sub-station site was selected and the work of erecting the station with its equipment commenced on May 11th, under the supervision of this Department.

On August 4th all work was practically completed and Georgetown received its first supply of Niagara power.

Since the completion of the work originally planned a representative of the Commission has continued to visit Georgetown at regular intervals to assist the Municipality in building up the load, soliciting power contracts, etc., and also advising them on any points that come up in connection with the management of their Municipal system.

During the period of less than three months since the Corporation took over the business there has been a very rapid increase in the number of consumers, the number of lighting consumers having increased from 150 to 228, while a number of others have signed contracts, but owing to the great demand the Town has not as yet been able to make the necessary connections. There are at the present time three power customers being supplied and two others awaiting connections.

Glencoe

The power conditions in Glencoe have been investigated, and a number of estimates have been prepared of the cost of serving them under various conditions. As yet, a satisfactory proposition has not been submitted, but with the recent developments in the power situation in other municipalities in the district and in Essex and Kent counties, it is anticipated that power can be given Glencoe at a reasonable cost.

Goderich

In November, 1912, a contract for the supply of 700 h.p. at an estimated cost of $37.00 per h.p. per year, was drawn up and submitted to the Municipality. In the following month they were also advised that $30,000.00 would be required to cover the cost of sub-station equipment, and of reconstructing their distribution systems. Plans were submitted showing the location of new street lights, and of the various power and lighting circuits to be installed. After discussing these subjects, and having the various details explained, the Council of the Town of Goderich instructed the Mayor and Clerk, to sign the contract as submitted, and to proceed with the construction.

Orders were placed for supplies at once, the Council having passed a resolution requesting the Commission to do so. Work was started in March under the supervision of this Department. This work included the reconstruction of their distribution and street lighting systems and the installation of an ornamental street lighting system in the business section. The intallations have been completed and it is anticipated that power will be delivered about the end of December.

Granton

See Report on Ailsa Craig.

Grand Valley

A resolution was received from the Village of Grand Valley asking for an estimate on the cost of transmitting 100 h.p. to them. The proposition of delivering this power is being considered along with the other towns and villages in this district.

(See Report on Alliston).

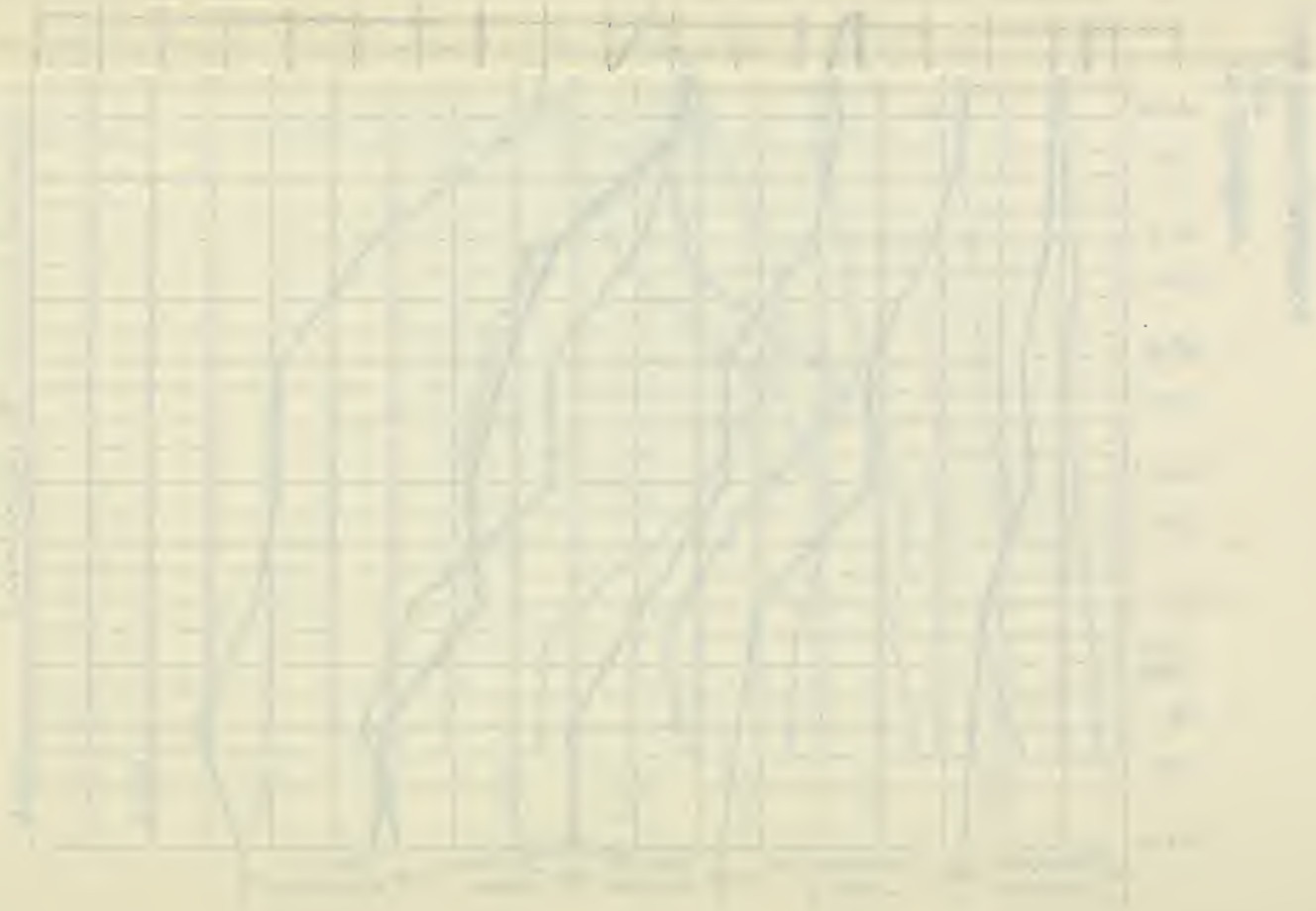
Grantham Township

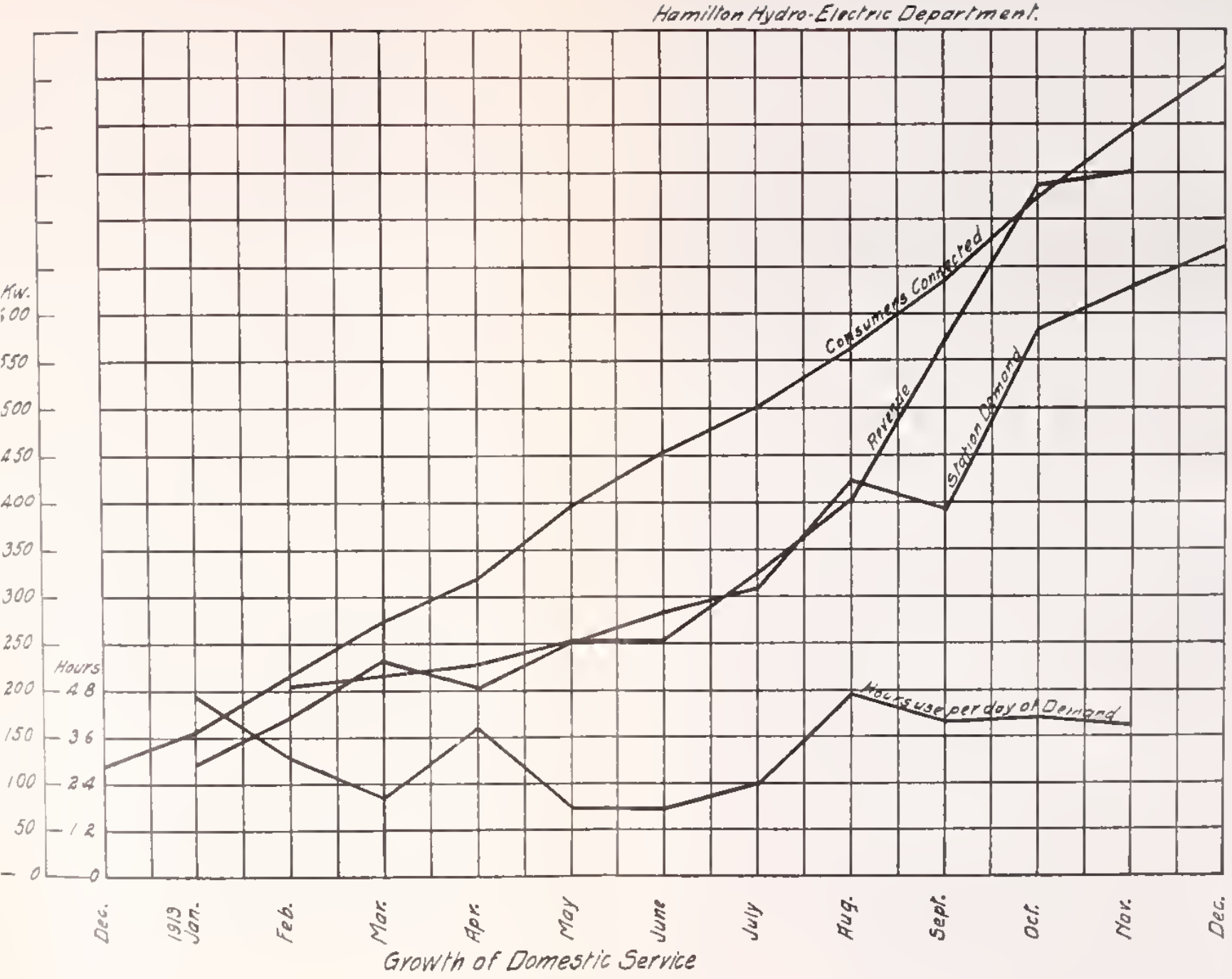
A number of estimates of the cost of serving the residents of this Township with power were prepared in an endeavor to ascertain the most economical method of distribution. Representatives of the Commission addressed meetings of ratepayers of the Township where the question of rural distribution of power was dealt with. At the same time a complete survey was made of the Township to obtain all possible data in regard to the possible load and its distribution, in order that the estimates referred to might meet conditions closely.

A schedule of rates was prepared based on these estimates and a representative attended a meeting of the Township Council, submitting these estimated rates to them. The Council thereupon passed a resolution approving of those rates, and requested the Commission to assist them in canvassing the Township for contracts.

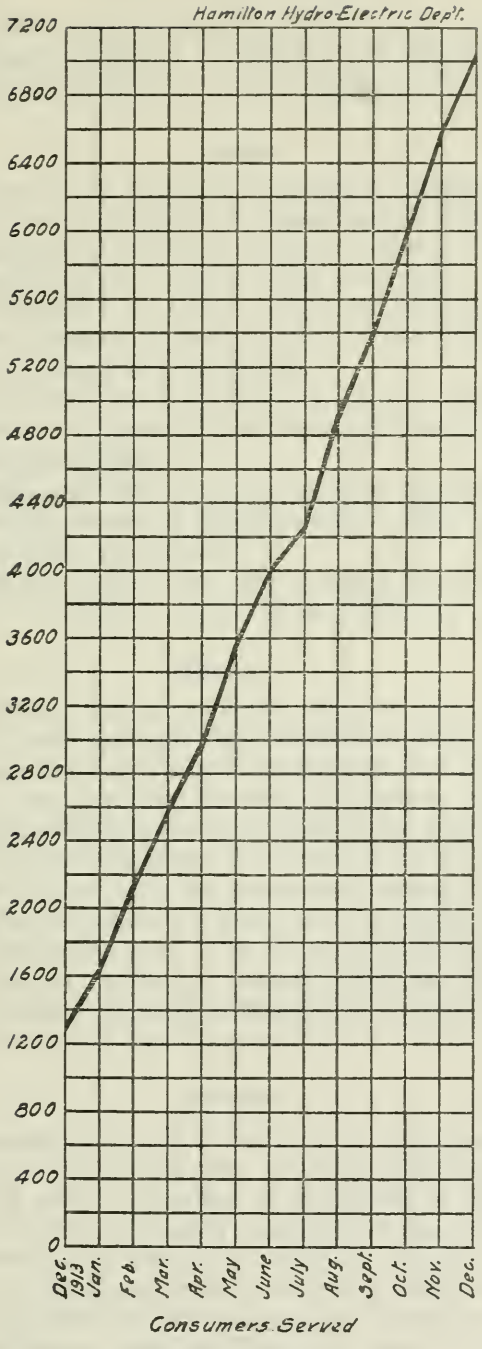
Grimsby

See Report on St. Ann's district.





Growth of Domestic Service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Consumers Served

Grimsby, North Township

In compliance with a request from the Reeve of the Township of North Grimsby, a representative addressed a meeting of the Council, and explained to them the procedure to be followed to obtain a supply of Hydro-Electric power in rural districts.

Guelph

At the beginning of the year the Commission recommended the standard schedule of rates for use in Guelph which change made necessary a detailed study of the Guelph municipal load. With this object in view a representative visited Guelph, obtaining complete data concerning each power user. Several conferences were held with the officials of the Guelph Light and Heat Commission when the question of rates was discussed at some length. It was finally decided that the recommendation of the Commission be adopted.

A representative also made a number of visits to Guelph, to report on the power conditions of a number of manufacturers there, soliciting their load for the Guelph Municipal System.

The Guelph Light and Heat Commission asked permission to give power service to a large factory outside of the City limits. This case was investigated and the desired permission was granted.

During the year the Guelph load has shown a substantial increase, their demand being 1561.5 h.p., while in 1912 it was 1273.5 h.p.

Hagersville

The Council approved the Commission's estimates for a distribution system on November 9, 1912, and requested that construction should be started as soon as possible. This work was begun almost immediately and completed in April at a cost of about 5 per cent. less than the estimated amount, although considerably more work has been carried out than was included in the estimate.

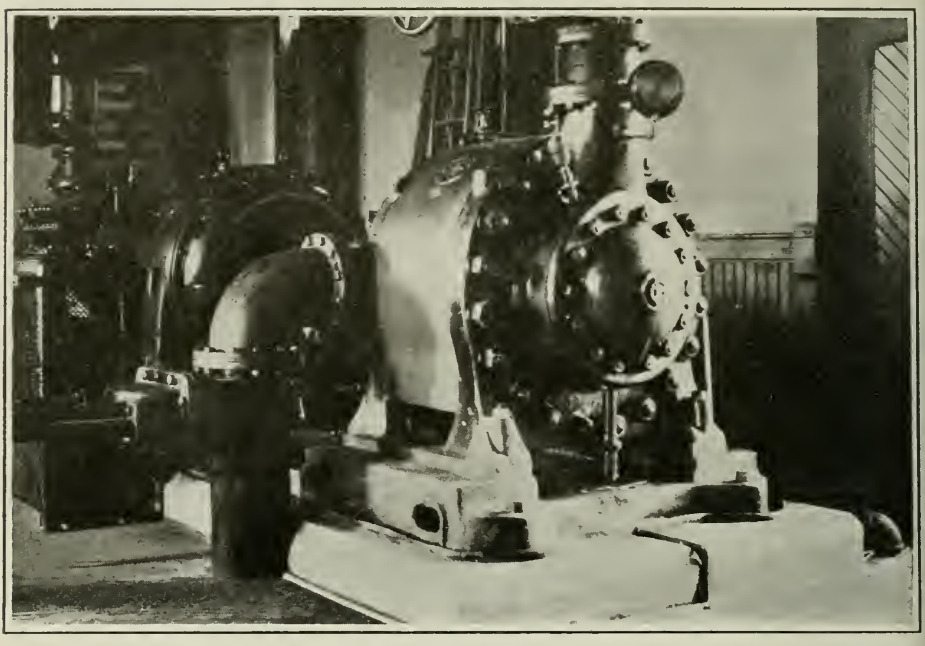
A contract between the Village and the Commission for the supply of 150 h.p. at $33.21 per h.p. per year for 2200 volt power was executed in December.

Hagersville municipal system was made alive on September 1st when power and lighting service was commenced. The Village already has considerable power load and there are prospects of further increase in the near future. Assistance is being given in working up a business in Hagersville, a representative visiting the Village at regular intervals for that purpose.

Hamilton

Although the municipal system of the City of Hamilton has been under a state of construction throughout the year, yet their business and load have both grown at a very rapid rate. The extent of this growth is illustrated by the increase in the demand on the Commission's transmission lines, the load of 2118 h.p. taken in October, 1912, having increased to 3706 h.p. for the last month covered by this report. The accompanying curves show the growth in the number of consumers, and in the loads taken by different classes of customers.

A number of conferences were held during the year, when questions arising out of the construction work that was being carried on and in reference to the management of their rapidly growing business were discussed. The schedule of rates recommended for use in Hamilton was given considerable study before being adopted.



Waterworks Pump, Galt

Lighting in Residential District, Galt

Plans for the underground system, which require the approval of the Commission before construction is commenced, were submitted for suggestions and recommendations before the complete detailed drawings were made up for submission to the Board.

West Hamilton

Inquiries having been received in regard to giving power and lighting service in West Hamilton, conditions there were investigated, and an estimate was prepared of the cost of the necessary construction. It was estimated that the total cost would be approximately $8,000.00. The Town of Dundas expressed themselves willing to undertake the management of this service, and permission was granted them to do so, it being stipulated that the rates used in billing users of light and power should be approved by the Commission. In making this installation, this Department acted in a consulting and supervising capacity.

Power and lighting service has been given in West Hamilton and arrangements are now being made to install street lights, which will complete their present system.

(See Report on Dundas).

Harrow

A representative investigated the power conditions in Harrow and reported 150 h.p. to be in use. A report was also made on the franchises held by the present Company, giving an inventory of their equipment within the Municipality, and the rates in force. The proposition of serving Harrow is being considered along with the other municipalities in Essex County.

Hawtry

See Report on South Norwich Township.

Hespeler

Although there have been no important developments in Hespeler during the year, they have maintained their past loads and indications are good for steady growth. A representative has visited the town at intervals to advise them on details of management and accounting. Improvements to their circuits and the installation of a lighting feeder regulator were recommended after a study of local conditions.

Hensall

See Report on Ailsa Craig.

Hillsdale

In February, 1913, a request was received from the Police Village of Hillsdale in reference to the procedure to be followed in obtaining a supply of Hydro power: in reply to which copies of the Rural Distribution Act of 1911 and resolution forms were forwarded, with instructions as to their use. In May a resolution was received asking for an estimate of the cost of transmitting 50 h.p. to them. An estimate was accordingly prepared, made on the assumption that Phelpston would also take 25 h.p. and Waverley 25 h.p., and early in July the rate of $46.93 was submitted. This estimated cost was for power stepped down to a voltage suitable for distribution within the Village.

Ingersoll

During the year a representative visited Ingersoll at regular intervals to advise the local authorities on various details of management and of operation of their Municipal System. A number of prospective power users were also visited and study made of their requirements, assisting the Municipality in soliciting their business.

The schedule of rates in Ingersoll differed greatly from the standard. To demonstrate the advisability of their adopting the schedule recommended, a detailed study was made of each consumer's requirements, and after several conferences with the local authorities, when the various points were discussed, it was decided that the recommended schedule be put in force.

The Ingersoll Electric Light and Power Commission requested permission to serve certain applicants for power and lighting service outside the Corporation limits. After going into each case thoroughly, it was finally decided that this permission be granted.

The load in Ingersoll has continued to show a satisfactory growth, their demand of 482 h.p. for 1912 having been increased to 563 h.p.

Jeannette

See Report on Merlin.

Jordan

See Report on St. Ann's District.

Kerrwood

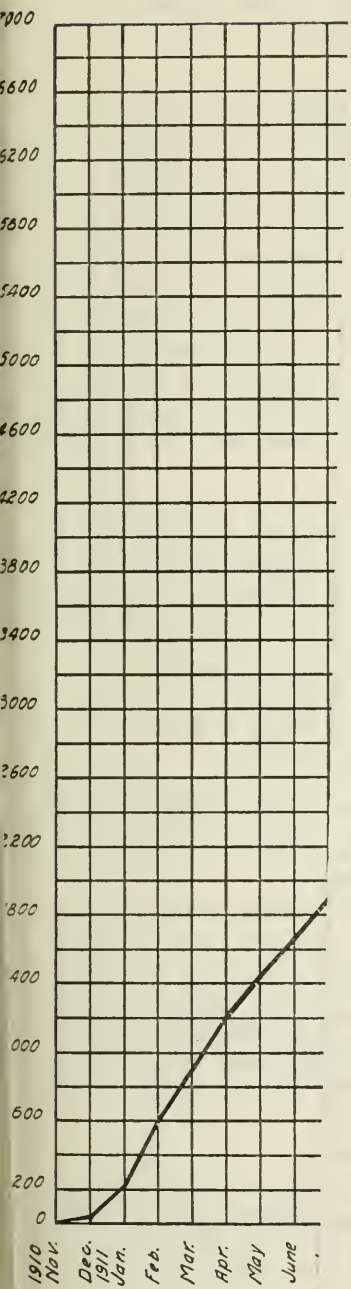
A representative visited Kerrwood to make a study of the local power conditions. He reported that 110 h.p. was in use and that with the municipality contracting for a supply of Hydro-Electric power, a probable load of 60 h.p. could be obtained for their system. Estimates of the cost of Hydro power to Kerrwood are being prepared.

Kincardine

Although Kincardine passed its enabling by-law in January, 1911, no definite action can be taken on the part of the Commission to give them a supply of power, until such time as the Hydraulic Department has finished its investigations of the water powers in Bruce County. During the early part of the year a number of inquiries were received from the town as to what progress was being made towards the point when they might take up the question of a power supply. A representative visited the town about the middle of June, to address a meeting of the ratepayers and explain to them the reason for delay, and what was being done for the municipalities in that part of the Province.

Kingsville

A representative visited Kingsville and made a detailed study of the power situation there. He reported 1,350 h.p. to be in use, which amount would be increased to 1,400 h.p. in the near future. A report was also made on the franchise of the Company at present operating there, giving an inventory of their equipment within the Municipality, the rates in force, and the approximate cost of power. The proposition of serving Kingsville is being considered, together with the other towns and villages in Essex County.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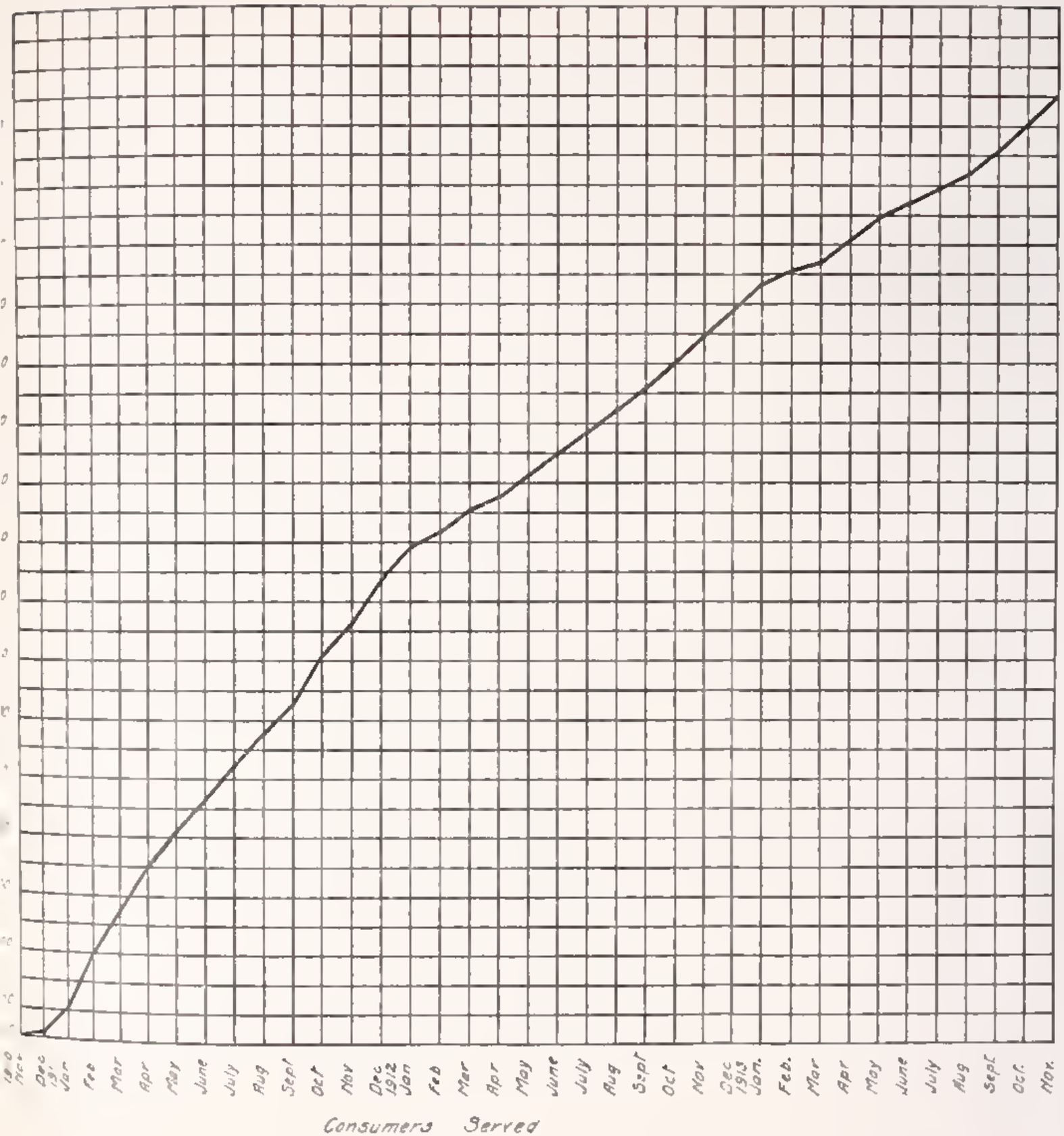
Water Commissioners, London.



Consumers Served

Kingscourt

The power conditions in Kingscourt were investigated and it was found that the total amount of power being used was very small, not totalling more than 25 h.p., and that the load which could be obtained for a Municipal Hydro-Electric system would also be very small.

Kingston

In April, 1913, an estimate was prepared of the cost of an underground distribution system for the City of Kingston, and a report that a By-law for $34,000 should be sufficient to cover this was submitted to the local authorities. This By-law was carried early in June, and the Department was immediately instructed to proceed with the preparation of plans of a conduit system together with ornamental street lights to be installed in the business section. The local authorities of the city called for tenders in accordance with the plans submitted. At their request a representative was present in Kingston when these tenders were opened, to advise them in placing the contract for the work.

An inquiry was received asking for advice and costs of installing a 6,000,000 gallon pump for the city. Estimating quotations were obtained covering the equipment desired, and were submitted.

Komoka

During March a representative visited Komoka and reported the power requirements of that village to be about 50 h.p. Estimates were accordingly prepared of the cost of serving Komoka from London, together with Strathroy and Mount Bridges. The following estimated costs were submitted in June:—

Komoka taking 100 h.p. of the total of 1,200 h.p. to the three municipalities—$29.81 per h.p. per year.

Komoka taking 50 h.p. of the total of 600 h.p. to the three municipalities—$35.22 per h.p. per year.

These estimated costs are for power delivered at a voltage suitable for distribution within the village limits.

Leamington

A representative visited Leamington making a detailed study of the power situation there. He reported that 775 h.p. was being used and that a probable load of 150 h.p. could be obtained for a Municipal Hydro-Electric System. He also made a complete report on the electric plant operating there, giving details in connection with their franchise, an inventory of their equipment, and the approximate cost of operation. The proposition of supplying power to Leamington is being considered along with the other towns and villages in Essex County.

London

During the year the London Municipal load has continued to show a satisfactory increase, their demand having reached 3,391.5 h.p., while that for 1912 was 2,681 h.p. The accompanying curves show the manner in which this load has increased during the last two years both as to demand and as to consumption. It will be noted that there has been a steady improvement in the load factor in their system. The rate at which new consumers have been taken on since the inception of the Hydro power is also shown. This curve shows a steady increase from month to month.

Louth Township

A petition asking for an estimate of the cost of power service in the Township of Louth was received in November, 1912. In response to this a representative addressed a meeting of the Township Council in January, 1913, on the question of power to rural districts. He reported the requirements of Jordan as 20 h.p. and of Jordan Station as 250 h.p. In June a representative went over the districts covered by the petition and obtained data whereby estimates could be made of the cost of giving service to the Township in the most economical manner.

Lucan

An application was received from Lucan asking for an estimate of the cost of transmitting 300 h.p. to that Municipality. The proposition of supplying this power was considered along with that of serving other towns in this district.

(See Report on Ailsa Craig.)

Lucknow

In response to a request from the Lucknow Board of Trade asking for information in reference to Hydro-Electric power, a representative attended a meeting of that body and addressed it on the subject. While there he made a study of the local power conditions, and reported that a probable load of 100 h.p. could be obtained for a Municipal Hydro-Electric System.

Markdale

A representative visited Markdale who reported that a probable load of 150 h.p. could be obtained for a municipal Hydro-Electric system.

(See report on Owen Sound).

Markham

The Village of Markham passed the enabling by-law in January, 1913, by a vote of 157 to 8. Previous to this representatives had addressed meetings of the ratepayers when the workings of the Hydro-Electric scheme were explained.

A representative also visited Markham who made an inventory of the electrical equipment at present installed in the village and made notes of conditions, from which an estimate was made of the cost of remodelling and reconstructing their system to distribute Hydro-Electric power. The village was advised that they would require $5,000.00 to cover the cost of this work.

A number of estimates were made of the cost of serving Markham together with other municipalities in that district. None of these were submitted, however, nor has any further action been taken pending the decision that is to be made in reference to running a municipal railway through that district, which would receive its supply of power over the same lines as the municipalities.

Melbourne

A representative visited Melbourne and reported that 25 h.p. was being used there, which amount would be increased to 40 h.p. in the near future. Should a contract be signed for Hydro-Electric power, a probable load of 25 h.p. could be obtained for a municipal system.

Merritton

A representative visited Merritton who made a complete report on the power situation there. He reported 5,135 h.p. of waterpower to be developed there, of which 3,895 h.p. was being used. In addition to this, 105 h.p. of electrical power was purchased, making a total of 4,000 h.p. in use in the town. This total amount was to be increased to 4,615 h.p. in the near future.

Merlin

A representative visited Merlin, to investigate the power situation there. He also investigated the situation in Fletcher, Jeannette and Coatsworth. The following amounts of power were reported to be in use in these places:—

Fletcher	25 h.p.
Jeannette	25 h.p.
Coatsworth	50 h.p.
Merlin	100 h.p.

It is not probable that the loads that could be obtained in this district would be large, but estimates of the cost of power to these villages will, however, be made up in connection with the scheme of supplying power to the municipalities in Kent County.

Midland

During the year a representative has visited Midland at regular intervals and advised the local authorities on various details of management. Assistance was also given in soliciting new power consumers and in laying out extensions to the municipal distribution system to serve them. Their business has continued to increase during the year in a satisfactory manner in all departments, new consumers being continually added to their system both for power and for lighting service, and with the prospects they have at present in hand, a further increase is expected for the next year.

The amount of power taken by Midland has increased to 315 h.p. for the last current month.

Milton

The local distribution system in Milton was reconstructed under the supervision of this Department, which work included the installation of a new street lighting system replacing their old system and arranged to light all streets, rebuilding their old power and lighting distribution systems, to adapt them to the use of Hydro-Electric Power, and building extensions to cover districts in which no service had been previously given.

Niagara power was first delivered to Milton on March 13th. During their first month of operation a load of 187.5 h.p. was taken. The load taken during the last current month was 321.5 h.p.

Assistance was given Milton in connection with the various details of management, and in soliciting prospective power consumers, a representative visiting the town at regular intervals for that purpose.

Mimico

A petition having been received from Etobicoke Township asking for electric service to certain residents living near Mimico, it was proposed to have the village take care of this load. The local Commission expressed their willingness to handle this business, and an agreement was accordingly drawn up and signed.

Materials for this line were ordered and as soon as these had arrived, construction work was started and carried on to completion under the supervision of this Department.

A representative visited Mimico at regular intervals who advised them on any questions coming up in connection with their power business, and assisted them in soliciting additional load. During the year their load has increased from 50 h.p. taken in October, 1912, to 71 h.p. for the last current month. It will be noted that Mimico contracted for 50 h.p.

Mitchell

Frequent visits were made to Mitchell during the year by a representative of the Commission, who found their electrical department in a very healthy condition, and that general satisfaction existed among the consumers. There has been no phenomenal growth in the numbers of consumers or in the power used during the year, due to the fact that during 1912, when a vigorous campaign for business was carried on, nearly all the possible consumers were given service.

Mount Brydges

A representative visited Mount Brydges addressing a meeting on the steps to be taken to obtain a supply of Hydro-Electric power. This meeting was attended by delegates from various towns and villages in that district, including Strathroy, Glencoe, Newbury, Wardsville, Melbourne, and Komoka. While there he also investigated the local power conditions and reported 30 h.p. to be in use, which amount would be increased to 65 h.p. in the near future. The probable initial load that could be obtained for a municipal Hydro-Electric system was estimated at 35 h.p. A number of estimates were made of the cost of serving Mount Brydges together with the other towns in that district, and in June the following estimated costs were submitted:

Mount Brydges taking 100 h.p. of a total of 1,200 h.p. transmitted to Strathroy, Komoka, and Mount Bhydges: $35.23 per h.p. year.

Mount Brydges taking 50 h.p. of a total of 600 h.p. transmitted to Strathroy, Komoka, and Mount Brydges: $46.08 per h.p. per year.

These estimated costs are for power delivered to Mount Brydges at a voltage suitable for distribution within the municipality.

Nelson Township

An application was received asking for an estimate of the cost of power to be distributed through the Township of Nelson. A study will be made of the local conditions in order that the estimate may be made on the most advantageous basis.

A brick company who were establishing a plant near Appleby in this township, applied to the Commission for a supply of power. Estimates were prepared of the cost of transmitting the power to them, and a proposed form of agreement was prepared which was submitted to the company for their consideration.

New Hamburg

A representative visited New Hamburg at regular intervals who advised the local authorities on any details of management concerning which they were in doubt, and assisted them in laying out extensions to serve new consumers. During the year, the New Hamburg municipal load has shown a satisfactory growth, having increased from 107 h.p. in October, 1912, to 174 h.p.

Newburg

A representative investigated the power situation at Newburg and reported 190 h.p. to be in use there, and that a probable load of 50 h.p. could be obtained for a municipal Hydro-Electric system.

Newmarket

In December, the following estimated costs of power were submitted to Newmarket:—

300 h.p.—$27.90 per h.p. per year.
500 h.p.—$25.43 per h.p. per year.

These estimated costs were for power delivered to the town at 13,200 volts. Power at 44,000 volts was, however, recommended in preference to the above, an estimated cost of $28.50 per h.p. per year on the basis of 500 h.p. being submitted.

Subsequent to this a private corporation submitted a proposition to the town for a supply of power. A by-law authorizing an agreement with the private corporation was submitted to the ratepayers and defeated. No further action has been taken on the part of the town in reference to obtaining a supply of power through the Hydro-Electric Power Commission.

Niagara Falls

In November, 1912, estimates of the cost of supplying power in amounts varying from 1,000 h.p. up to 5,000 h.p. in steps of 500 h.p. were forwarded to this municipality, the cost varying from $12.82 per h.p. per year for the smaller quantity to $11.71 per h.p. per year for the larger. These costs were made on the assumption that power will be delivered to the town at a voltage suitable for distribution along the city streets.

Niagara Township

A representative attended a meeting of the Council of the Township of Niagara when Hydro-Electric matters were explained, chiefly those in reference to the supply of power in rural districts. A petition had been received from this township which was small and not representative, and it was decided not to prepare any estimates until a thorough canvass could be made. A report made on the power situation in this township places the total power used for manufacturing purposes at 400 h.p.

North Bay

The annual reports of 1911 and 1912 give the history of the Commission's association with North Bay up to the beginning of the year just closed.

The enabling by-law was passed in December, 1912. At the same time a by-law to authorize the renewal of the Power Company's franchise was defeated.

A valuation was made of the local distribution system which was submitted to the town. Using this valuation as a basis, a by-law to raise $60,000.00 for the purchase of this system, and for making changes and additions to it was passed in January, 1913.

Since that time estimates have been made and negotiations have been carried on to obtain a supply of power for North Bay which negotiations are still pending.

Norwich, South Township

Estimates were made of the cost of serving the villages of Otterville, Hawtrey, Springford and Rockmills, in the Township of South Norwich. Advantageous propositions could not be given at this time owing to the small quantities of power required and the long distances over which they would have to be transmitted.

Norwich, North Township

A number of contracts were signed between residents of the Township of North Norwich and the township for power and lighting service, along the road running from Norwich to Newark. It was arranged that the Commission build the lines necessary to give this service, which after completion were handed over to the Village of Norwich for operation and management. These arrangements were made on the understanding that should the township wish to take over this work to form a portion of a township system at any time, the line would be transferred to them. (See report on Norwich).

Norwich

A representative visited Norwich at regular intervals to help the local officials on various details of management and of engineering, in connection with their municipal electric system. Assistance was also given in soliciting new power users. Certain residents in the Township of North Norwich near the Village of Norwich having applied to the Commission for a supply of power, lines were built to serve them. Arrangements were made whereby the Village of Norwich assumed the responsibility of the operation of these lines and handling all of the business in connection with them. (See report on North Norwich Township.)

The village having proposed installing a waterworks system, assistance is being given them in working up a scheme that will meet their needs. Various proposals submitted from other sources have been referred to the department for comment. This matter will be reported on shortly.

Oil City

A representative visited Oil City who reported 50 h.p. to be in use there and that a probable lighting load of 10 h.p. could be obtained for a municipal Hydro-Electric system. Owing to this load being very small it is not probable that a satisfactory proposition can be submitted to Oil City until a considerable load has been obtained in the Sarnia district.

Oil Springs

A representative visited Oil Springs who made a detailed study of the power situation there. He reported that 640 h.p. was in use, which amount would be increased to 680 h.p. in the near future.

Orangeville

A representative visited Orangeville to investigate the power situation there and reported that a probable load of 800 h.p. could be obtained. A request was also received from Orangeville asking for estimates of the cost of transmitting 200, 500 and 700 h.p. to them. These estimates are now in the course of preparation, being made up on the assumption that the other towns and villages in this district will also take power. (See report on Alliston).

Ottawa

The City of Ottawa's Municipal Electrical Department is progressing in a very satisfactory manner. New consumers are being taken on at a very rapid rate. This has caused such an increase in the demand for power on the Commission, that it has been deemed advisable to make arrangements for the supply of a greater quantity than that covered by the present agreements. Negotiations towards this end are at present in hand, it being proposed to obtain sufficient power for the whole of this district.

Otterville

See report on South Norwich Township.

Owen Sound

The Town of Owen Sound had proposed to raise $50,000.00 by debentures to make extensions to the municipal electric light plant, including the installation of additional generating equipment. A representative visited the town and made a study of the local power situation. His report gave a description of their plant, the conditions existing there, the approximate cost of operation and the rates used in the sale of power.

About this time the Commission had obtained an option on the Eugenia Falls development, and Owen Sound was advised of that fact, it being estimated that 1,500 h.p. could be delivered to Owen Sound from this point at a cost of $29.00 per h.p. per year, for power at a voltage suitable for distribution within their limits. A representative then attended a meeting of the town officials and explained the proposition to them. An approximate statement was prepared and forwarded the town, showing the saving that could be made over their present power costs.

After a number of conferences at which the power question was discussed in detail, and which were attended by a representative of the Commission, a request was received from the town asking for an estimate of the cost of 800 h.p. transmitted to them from Eugenia Falls. This estimate was accordingly prepared and a letter was forwarded, advising that that quantity of power could be delivered at a cost of $31.00 per h.p. per year.

An audit was made of the books of their Electric Light Department, and using the Auditor's report as a basis of cost, a second statement was prepared showing the cost of their power as generated by steam. This was found to be substantially the same as had been obtained from the approximate figures referred to above.

A form of agreement to be entered into between the town and the Commission was prepared and submitted to the town officials for their consideration. This agreement called for the delivery of 800 h.p.

The negotiations just outlined covered a period from the middle of December, 1912, to the middle of April, 1913. About the end of May a copy of a resolution adopted by the Town Council was received by the Commission, which stated that the town would enter into an agreement with the Commission for a supply of power from Eugenia Falls, provided 1,200 h.p. could be carried during low water periods. Further action in the matter has been held up until the Hydraulic Department report on flow conditions. The findings of the Hydraulic Department concerning Eugenia Falls will be found elsewhere in this report. (See Hydraulic Report).

In the meantime an investigation was made of the power requirements of the villages in this district, including Flesherton, Markdale, Chatsworth and Durham. (See reports on these villages).

Paris

An agreement for the supply of 600 h.p. to the Town of Paris at an estimated cost of $21.00 per h.p. per year for 26,400 volt power was drawn up and signed.

During the year the local authorities have been remodelling their distribution system, adapting it to handle the power to be supplied by the Commission. Their street lighting system was entirely remodelled, new brackets and 100 c.p. lamps being placed in all portions of the town. An ornamental street lighting system was planned for the business section and will be installed next year.

Specifications were drawn up and transforming and switching equipment ordered to be installed in the town's power station. The old steam station is being remodelled for this purpose from plans prepared by this Department.

In anticipation of power being delivered to Paris at an early date, a schedule of rates recommended for their use was drawn up and submitted to them. A representative has visited Paris a number of times for the purpose of explaining the system of charge and assisting them in laying these rates before prospective power users.

Parkhill

See Report on Ailsa Craig.

Palmerston

In compliance with a request from Palmerston, a representative reported on their electric lighting plant. This report covered in detail the equipment and method of operation of their generating equipment, the rates in use, and the financial condition of their utility. The Town was advised wherein they could make a saving in their cost of operation and of management, instructions being given as to the procedure to be followed in each separate detail.

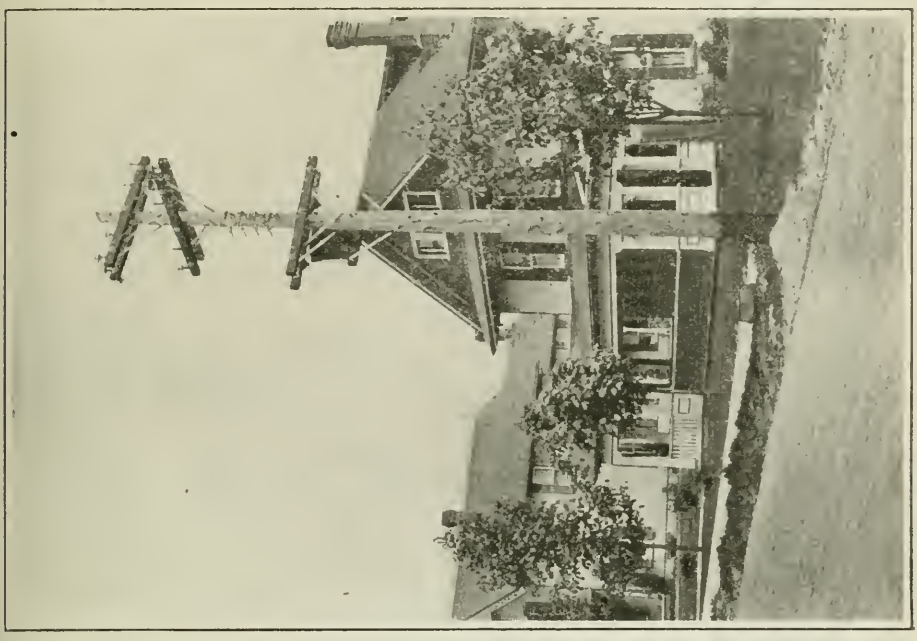
Penetanguishene

During the year a representative visited Pentanguishene at regular intervals who advised the local officials in the various details of management and of operation of their municipal system. Assistance was also given them in soliciting new power consumers and in laying out extensions to serve them after contracts had been signed.

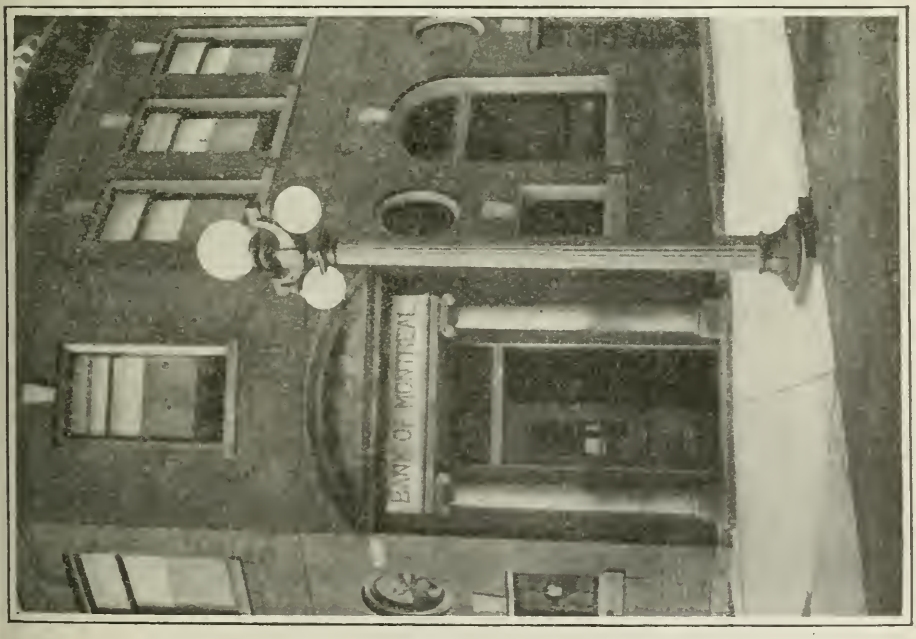
The load taken by the town has increased to 284 h.p. and with the addition of the load to be taken by motors that are at present being installed, it is anticipated that a demand of about 600 h.p. will be reached. One of their consumers is considering the advisability of making extensions that will require an additional motor installation of 1,200 h.p. Should this proposition materialize. Penetanguishene will have a load greatly exceeding their anticipations. In this connection it is of interest to note that their contract calls for the delivery of 200 h.p.

Peterboro

A by-law to authorize an issue of debentures for $120,000.00 to acquire a distribution and street lighting system was carried in January. Representatives had addressed a number of ratepayers' meetings in the interest of this by-law and of the Hydro-Electric scheme, assisting the local authorities in placing this question before the people.



Georgetown. Typical Wiring Arrangement



Street Lighting Standard, Goderich

A contract for the supply of power to the City of Peterboro was then drawn up and submitted to the City for their consideration. After discussing the proposed agreement with them and arranging all details to the mutual satisfaction of the City and Commission, the contract was signed.

Acting in the capacity of Consulting Engineer for the City of Peterboro, plans were prepared of an underground system of street lighting distribution to supply magnetite arc lamps placed on ornamental poles. Tenders were received covering all the materials required which were submitted to the local authorities, with recommendations. Contracts were subsequently let for this equipment, and the work of construction is being carried on under the Department's supervision.

With the installation of their ornamental street lighting, the question of having all wooden poles removed from the streets in that section was taken up. It was arranged to carry the lines giving lighting service on poles located in the alleys and at the backs of lots. With this arrangement and with the removal of a small number of poles belonging to telegraph and telephone companies, these streets will be cleared of all poles except those used to carry the street lighting brackets.

A valuation was made of the plant and equipment of a local company, a report on which was made out in detail, and forwarded to the local authorities to be used by them in arbitration proceedings regarding the purchase of the Company's property.

Pelham Township

Power conditions were investigated in this district early in the year by a representative of the Commission, who reported that there was considerable interest in the question of obtaining Hydro-Electric power. At the request of the Township another representative addressed a meeting of ratepayers, instructing them as to the procedure to be followed to obtain such service. No further action has been taken on the part of the Commission, as the necessary rural petitions have not as yet been received. (See report on Fonthill.)

Petrolea

A representative visited Petrolea who made a study of the local power situation, on which he reported in detail. It was found that 1,195 h.p. was being used for various purposes, which quantity was expected to increase to 1,915 h.p. in the near future. In the event of the Town contracting for a supply of power, a probable load of 500 h.p. could be obtained for a Municipal Hydro-Electric System. The proposition of serving Petrolea with Hydro-Electric power is being considered along with other municipalities in this district.

Petersburg

Applications having been received for power and lighting service in Petersburg and also from St. Agatha, estimates were prepared of the cost of transmitting the power to these points from Baden. It was shown that with existing demands the power could be transmitted economically. A line was accordingly built from Baden, it having been arranged that the Commission would finance the construction, while Baden would assume responsibility of the operation of the line and collect all revenues for service. (See report on Baden.)

Plattsville

See Report on Blenheim Township.

Port Arthur

In the report of 1912, it was recorded that the Commission had taken up the work of assisting Port Arthur in remodelling the equipment in the Current River plant to take care of prospective increase in their load. A representative had visited Port Arthur for that purpose, who reported in detail the changes and additions that would be needed in their generating plant and transmission system. Data was also obtained as to the additional load they contemplated serving. With this data at hand, plans were drawn up covering the changes to be made to their local system concerning which Port Arthur has been advised in detail. The desirability of having this work done at once has been explained to the local authorities.

Estimates were prepared of the cost of serving the proposed new consumers in Port Arthur, among which were the Dominion Grain Commission's new grain elevator, Port Arthur Elevator Co. (C.N.R.) and the C.N.R. coal docks. Forms of agreement between the City of Port Arthur and the Dominion Grain Commission and also between the City of Port Arthur and the Port Arthur Elevator Co., were drawn up, covering the supply of power at 22,000 volts at a rate based on the estimates that had been prepared. These agreements were signed, the Dominion Grain Commission contracting for 1,000 h.p. and the Port Arthur Elevator Co. for 400 h.p.

In addition to assisting Port Arthur in laying out extensions to serve these new consumers, the Department also acted in a consulting capacity for the consumers, assisting them in purchasing their electrical equipment. Plans of the electrical layout of these plants were also examined, and comments and recommendations were made before the final arrangment was decided upon. After the completion of the installation an inspection was made of the electrical equipment. As a result of this work the new Dominion Grain Elevator was completed and placed in operation late in September, and is operated entirely by power supplied by the city. It is expected that the economies here shown will result in further loads from grain elevators and point to a large additional load of this character adjoining the Government elevator.

It having been decided to erect a new pumping station in connection with the Municipal Water Works System, considerable preliminary work has been done in connection with the necessary electrical equipment. Quotations are being received, covering this electrical apparatus, and as soon as a study has been made of these, recommendations will be made to the local authorities.

The local authorities were also advised concerning various details of management of their distribution system, and a complete inspection was made of their lines, and recommendations were made covering these points.

By operating their Current River generating station with care and economy, the purchased power has not shown a great increase resulting in a low cost of power for the city.

Port Colborne

A representative visited Port Colborne in March who made a study of the local situation. It was reported that 4,305 h.p. was being used there, which amount would probably be increased to 6,415 h.p. in the near future. If the Town should contract with the Commission for a supply of power, a probable initial load of 205 h.p. could be obtained for a municipal system.

Inquiries were made as to the procedure to be followed by the Municipality to get a supply of power. Instructions were given, and in September a resolution was received asking for an estimate of the cost of 100 h.p. to them. This estimate is now in the course of preparation.

Port Credit

A representative visited Port Credit at regular intervals who advised the local authorities on any details of management concerning which they were in any way in doubt. Assistance was also given in laying out extensions to their local distribution system. (See also report on Toronto Township.)

Port Dalhousie

Port Dalhousie has been visited at intervals by a representative who has advised them on any details of management or operation whenever they needed assistance. They were also assisted in laying out changes and extensions to be made to the local distribution and street lighting systems.

Port McNicoll

See Report on Tay Township.

Port Perry

Estimates were prepared of the cost of power to Port Perry, which under the present conditions were found to be too high. No further action has been taken pending developments in the municipal railway scheme covering that district.

Port Robinson

An inquiry was received from a manufacturing company for a supply of power to their factory at Port Robinson. Estimates were prepared of the cost of supplying this power and a contract was drawn up and signed for a supply of 110 h.p. at 12,000 volts. Arrangements were made to tap the Ontario Power Company's lines near this plant so that service could be given them with the minimum amount of construction, and an agreement was drawn up and signed covering this detail. Arrangements were made with the Town of Welland that they take care of the service as well as any other service that might be required in the village. (See report on Welland.)

Port Stanley

During the year a representative visited Port Stanley at regular intervals to advise the local authorities on any details in connection with their electrical department on which they required assistance. The results obtained in Port Stanley continue to be most satisfactory.

Point Edward

After visiting Point Edward and investigating the local power situation, a representative reported the total amount of power to be in use there at 215 h.p. Should a contract be signed for supply of power through the Commission, a probable initial load of 50 h.p. could be obtained for their municipal system.

Prescott

The work of reconstructing the local distribution and street lighting systems in the Town of Prescott is in progress under the direction of the Department, it being decided to replace the poles that carried primary wires and reset those carrying secondary lines. Prescott enjoys the distinction of being the first town to receive power through the Commission from developments upon the St. Lawrence River.

Preston

The load on the Preston Municipal system has continued to show a substantial increase during the year, the load of 657.5 h.p. taken during October, 1913, having grown to 931 h.p. for the last current month.

On account of this increase additions were made to the installation in the town sub-station, doubling their transformer capacity. Changes and additions were also made to the switching equipment and station wiring to permit a 6,600 volt line being carried out to serve the Doon Twines, Limited, at Doon, with whom the Commission had obtained a contract for the supply of power. Plans and specifications were drawn up covering this work, and after tenders had been received they were forwarded to Preston with comments and recommendations. The work of installation has been completed and the equipment put in service. Tenders have also been secured and orders placed for additional feeder equipment for this station.

The Preston Light and Water Commission advised the Commission that they were desirous of taking over and operating the line that the Commission had built to serve Doon. An Agreement was drawn up and signed whereby the Corporation assumes that responsibility. (See report on Doon).

Permission was asked by the town to serve certain districts outside their limits. A study was made of each particular case, with the result that the desired permission was granted.

In recommending a new schedule of rates for use in Preston, some doubt was raised as to the effect this would have on the bills of the various users. To make a thorough study of the case, a representative made a detailed report on conditions to be met with, with each consumer. Using this data as a basis of making a comparison, it was demonstrated to the local officials that satisfactory results would be obtained. The rates suggested were accordingly adopted.

The results obtained in Preston have been highly satisfactory in every way, and it is anticipated that the coming year will see a further increase in both their load and their business.

Renfrew

Owing to the fact that the contract between the Town of Renfrew and the Renfrew Power Company for street lighting will expire on June 1st, 1914, the Commission was requested to recommend and design a new and more up-to-date street lighting system for them. A representative visited the Town for the purpose of obtaining data on which to base estimates. A complete inventory was also made of the equipment of the local Companies and, based on these inventories, valuations have been made of their plants. The local manufacturers were also visited in order that that power situation could be reported on.

Reports covering all details are at present in the course of preparation, together with estimates of costs. When these have been completed, they will be forwarded to the Town authorities.

Ridgeville

See Report on St. Ann's District.

Ridgetown

After visiting Ridgetown and making a study of the power situation there, a representative made a report on the Municipal Electric Light Plant as well as the power used by the different manufacturers. He advised that 440 h.p. was being used, which quantity would in all probability be increased to 480 h.p. in the near future. Should the Municipality contract with the Commission for a supply of power, a probable load of 125 h.p. could be obtained. An estimate has been prepared of the cost of transmitting this power from the Commission's transformer station at Chatham, which estimate will be forwarded to the Municipality in the near future.

Rockmills

See Report on South Norwich Township.

Rockwood

On January 20th, 1913, the Police Village of Rockwood passed a By-law which empowered the Village Trustees to enter into a contract with the Commission for a supply of electric power and also a By-law to raise the money necessary to construct a distributing system. Three days later a contract was signed for the delivery of 50 h.p. at an estimated cost of $38.00 per h.p. per year, the power to be at a voltage suitable for distribution within the Village.

The Commission was asked to act in the capacity of Consulting Engineers to supervise the construction of their local distribution and street lighting systems. Acting in this capacity, plans were drawn up covering the work and orders were placed for materials. As soon as these had arrived a construction gang was placed in the Village who installed their system without delay.

Power was first delivered to Rockwood on August first. Since then they have been busy taking on consumers both of light and of power, and it is anticipated that their contracted amount of power will be taken very shortly.

In addition to supervising the installation at Rockwood, assistance has also been given in the various details of management, a representative having visited the local authorities at regular intervals to advise them on any questions as they came up. They were also assisted in soliciting their power consumers in an endeavor to build up a load as quickly as possible.

Russell

Preparatory to submitting the Enabling and Money By-laws, representatives of the Commission addressed rate-payers' meetings in the interest of Hydro-Electric power. These by-laws were both passed in May, the latter being for $7,000.00 as suggested by the Commission, after having prepared an estimate of the cost of installing a municipal distribution system. Estimates were prepared of the cost of delivering power to Russell and a form of agreement based on these has been prepared. This agreement calls for the delivery of 300 h.p. at an estimated cost of $33.87 per h.p. per year, the power to be at a voltage suitable for distribution throughout the Village.

Saltfleet Township

A meeting of the rate-payers of the Township of Saltfleet, held at Stoney Creek, was addressed by a representative of the Commission. At this meeting the question of supplying power in rural districts was discussed, and instructions were given as to the procedure to be followed to obtain a supply.

Sarnia

A representative visited Sarnia and made a detailed study of the power situation there. This report covered the plant and distribution system of the local Electric Company, giving a detailed description of all the apparatus used, the rates then in use for power and lighting service and the load carried. Details of the power generating equipment of the various manufacturers and other companies were also given. It was learned that 5330 h.p. was at that time being used in Sarnia, not including the G.T.R. tunnel load, and that it was proposed to increase this amount to 6570 h.p. in the near future. A meeting of the Associated Boards of Trade of Lambton County was addressed on the question of Hydro-Electric power.

Seaforth

The town distribution system is being maintained in excellent condition, while other parts of their utility are being taken care of in an equally satisfactory manner and with the assistance of this Department.

An extension was built to their local distribution system to serve Egmondville, giving house lighting and power service. Permission to do this work had been granted by the Commission some time previously. A number of small power users have been added to their lists as well as a great any lighting customers.

A proposal to instal electric fire pumps in the Town of Seaforth is now being considered.

Silverdale

See Report on St. Ann's District.

Simcoe

A number of estimates were prepared on the cost of serving Simcoe from the Brant station. Although an attractive rate was given, local conditions and a cheap supply of Natural Gas has delayed a decision. It is anticipated that with the completion of certain proposed developments in this district, Simcoe can then be given cheap power.

Smithville

See Report on St. Ann's District.

Stayner

The enabling by-law and a money by-law to raise $9,000 for Hydro-Electric purposes in the Town of Stayner were both carried at the January 1913 elections. In submitting these by-laws to the people, representatives of the Commission gave assistance to the local authorities, in addressing ratepayers' meetings and explaining the Hydro-Electric situation.

A form of contract was then drawn up covering the delivery of 125 h.p. to the town at an estimated cost of $37.82 per h.p. per year. This agreement was signed in February.

Immediately after the signing of this agreement, orders were placed for the municipal transformer station equipment and line materials necessary to extend the Simcoe transmission system to the station site, and to reconstruct the municipal distribution and street lighting systems. As soon as the materials had arrived construction work was started under the supervision of this Commission. The town having taken over the privately owned electric light plant, its street equipment was overhauled and remodeled to adapt it for use with Hydro-Electric power. Sixteen additional street lights were also installed in the business section. All construction work was completed and power service to Stayner was commenced during the last week of September.

Assistance is being given the town officials in soliciting power consumers, as a result of which a power load of 50 h.p. has been secured so far. Advice and instructions were also given concerning the various details of management and operation, a representative visiting the town at regular intervals for that purpose.

Stoney Point

The power conditions at Stoney Point were investigated by a representative of the Commission, who reported a probable load of only 10 h.p. for a Municipal Hydro-Electric System, owing to lack of industries and population.

Stouffville

Assistance was given the local authorities in submitting the enabling By-law to the people, representatives having addressed rate-payers' meetings for that purpose. This By-law was carried by a large majority at the January elections.

A valuation was made of the distribution system of the local Company, and an estimate was prepared of the cost of remodelling and reconstructing it for use with Hydro-Electric power. The Town was advised that approximately $11,400.00 would be necessary to take care of this work.

A number of estimates were prepared of the cost of delivering power to Stouffville. None of these have been submitted, pending the action to be taken on the proposed municipal railway through that district, which, if constructed, will make possible a much better proposition than can be given with the present demand.

Stratford

This City has been visited at intervals and advice given the local officials on questions of management, operation and laying out extensions to their Municipal System. A few of the more important details taken care of are outlined in the following.

The power load had increased to such an extent that it was found advisable to add another power circuit to their system, to be controlled by a separate panel in their substation. This addition was made in accordance with the recommendations of this Department.

The standard schedule of rates recommended for use in Stratford being on a different basis from previous rates, a thorough study was made of each customer's conditions to learn the effect that the proposed change would have on their bills. After going into the question carefully with the local authorities, they finally adopted the new schedule as recommended.

The property owners living at Sebringville having made application to the Commission for a supply of power under the Rural Distribution Act of 1911, Stratford Light and Heat Commission requested permission to extend their system

to take care of this load. This permission was granted on condition that, should the township wish at any future time to take over the city's extension as part of a township system, they could do so. This line has been constructed and service is now being given in Sebringville and along the road between Sebringville and Stratford.

The growth of the load on the Stratford Municipal System has been quite satisfactory, having increased from 643.5 h.p. taken in October, 1912, to 791 h.p. for the last current month.

Strathroy

A resolution was received from the Town Council of Strathroy asking for an estimate of the cost to deliver 200 h.p. to the Municipality. About the same time an investigation was being made of the power requirements of the district west of London as far as Windsor. Strathroy was visited during this investigation and it was reported that about 980 h.p. was being used in that Town. Of this amount about 375 h.p. could be secured at the start with a supply of Hydro power. A number of estimates were prepared of the cost of serving Strathroy, of which the following were submitted, it being assumed that Komoka and Mount Brydges would also be supplied:—

Strathroy taking 1000 h.p. of the total of 1200 h.p. to the three Municipalities:—
$32.18 per h.p. per year.

Strathroy taking 500 h.p. of the total of 600 h.p. to the three Municipalities:—
$40.86 per h.p. per year.

These estimates are for power delivered to the Municipality at a voltage suitable for distribution within their limits.

Streetsville

In compliance with a request from the Village of Streetsville, an estimate was prepared of the cost of transmitting 500 h.p. to that municipality. They were advised that this quantity of power could be delivered at an estimated cost of $22.00 per h.p. per year for 13,200 volt power. Later a request having been received to revise this estimate to cover 200 h.p., a cost of $26.00 per h.p. per year for 2,200 volt power was given the municipality.

Two brick manufacturers located at Streetsville approached the Commission for an immediate supply of power to their plants. Contracts were drawn up and signed covering this service. Transmission lines and a transformer station have been constructed under the supervision of this Department and 550 volt power was delivered to these companies about the middle of October. It is expected that the Village of Streetsville will pass the necessary by-laws, to permit their taking over these contracts and lines in the near future.

St. Agatha

See Reports on Petersburg and Baden.

St. Ann

See Report on St. Ann's District.

St. Ann's District

Early in the winter a representative visited all the towns and villages in the district lying between Grimsby and Welland, and reported on the power requirements of each place. This report covered the following places, the estimated amount of power required by each being set opposite its name:—

Municipality.	Estimated H.P. Requirements.
Fonthill	20 h.p.
Ridgeville	50 h.p.
Fenwick	20 h.p.
Dunnville	150 h.p.
Grimsby	300 h.p.
Beamsville	150 h.p.
Camden	20 h.p.
Vineland	150 h.p.
Jordan	200 h.p.
Wellandport	330 h.p.
St. Ann	35 h.p.
Smithville	150 h.p.
Bismark	20 h.p.
Silverdale	20 h.p.

With these quantities of power as a basis, preliminary estimates were prepared to cover the whole district.

St. Catharines

A resolution was received from St. Catharines asking for an estimate on the cost of delivering 2000 h.p. A study was made of the proposition and at a Council meeting held late in January, 1913, a representative addressed the City officials on the Hydro-Electric question, quoting them estimated costs of $14.00 per h.p. per year for 2000 h.p. and $16.00 per h.p. per year for 1000 h.p. These estimated costs were made on the basis of the power being delivered at 12,000 volts.

A survey of water and electric power being used in the city disclosed total water power available as 2800 h.p., of which 2305 h.p. was being used. Electric power was being supplied up to 3825 h.p., making a total of 6130 h.p. in use from various sources. A Municipal Hydro system could secure a probable initial load of 450 h.p.

A manufacturing Company in looking for a site to establish a factory calling for a large quantity of power, approached the City officials on this question. They, in turn, took up the question of having the Company served by the Commission until such time as the City would be able to take care of this load. A form of agreement to cover this service was prepared and submitted to the Company for their approval. The agreement has not yet been signed.

At the request of the City, inventories were made of the plants and equipments of the local distributing companies, and other data was obtained, from which an estimate has been made of the cost of installing a Municipal System to cover the district already served. It was estimated that such a plant would cost approximately $90,000.00. The cost of installing an underground distribution system with ornamental street lights in the business section was estimated as approximately $26,000.00. These figures were submitted to the City Council for their use in preparing a money by-law to cover the cost of a Municipal Hydro-Electric System.

Old System of Street Lighting, Peterboro

New Magnetite Street Lighting, Peterboro

The enabling By-law and a money By-law authorizing an issue of debentures of $116,000.00 were carried by large majorities on October 30th. On the same day a by-law to authorize the extension of the franchise of the company operating in St. Catharines was defeated.

St. Mary's

The usual supervision and assistance was given St. Mary's at regular intervals. Some of the more important questions that were dealt with are outlined in the following.

The standard schedule of rates recommended for use in St. Mary's differing from that then in use, an investigation of conditions was made to ascertain the effect of the change in rates. After going into the matter carefully and discussing the situation with the local Commission, it was finally decided that the rates be adopted as recommended.

Recommendations and plans were made for remodeling parts of the distribution system for improving the service to customers. Estimates were submitted covering this work.

A marked improvement is to be noted in regard to the results being obtained in St. Mary's. A number of consumers of both light and power have been added to their lists. The magnitude of this increase is illustrated in the growth of their municipal load, which has been increased from 261 h.p., the maximum load taken in 1912, to 388 h.p. for the present year. The St. Mary's Cement Company who are also taking power from the Commission, have created a demand of 1,555 h.p. from which St. Mary's benefits.

St. Thomas

Requests were received from the St. Thomas Light, Heat and Power Committee asking permission to serve certain districts lying outside the corporation limits. After investigating each case the desired permission was granted, it being stipulated that service should be given at rates to be approved of by the Commission.

A number of prospective power users were interviewed on behalf of the local authorities, soliciting additional power load for the municipal system. This has resulted in a number of additional users being obtained, some of them for large blocks of power. In addition to rendering assistance in obtaining new contracts, the engineering necessary to serve these consumers was taken care of by the Commission.

The extraordinary growth of the power business in St. Thomas is shown by the manner in which the load on their municipal system has increased. During the month of October, 1912, their maximum demand was 470 h.p. For the last current month the load has reached 1,173 h.p. With the addition of the load to be taken by motors at present being installed, it is anticipated that St. Thomas will shortly have a maximum demand greatly exceeding the amount of their original contract, which covers 1,500 h.p.

To meet this increased load and also to be in a position to take care of the present prospects, it has been deemed advisable to increase their transforme installation and install extra feeders, as well as a voltage regulator in the lighting circuits. This question is at present being taken care of, and it is anticipated that this additional equipment will be ordered immediately.

A representative has visited St. Thomas at regular intervals, and in addition to taking care of the work outlined above, had advised the local officials on questions of management and operation.

The load in the southern part of the city has increased to such an extent, that it has become necessary to erect a small transformer station here, stepping down from 13,200 to 2,300 volts. With this arrangement, service can be given much more economically in this section than by transmitting the power at 2,300 volts from their main transformer station.

Springford

See Report on South Norwich Township.

Sunderland

The enabling By-law was passed in November by a vote of 83 to 1. Before submitting this By-law to the rate-payers, a representative addressed meetings on behalf of the local authorities and discussed Hydro-Electric matters.

A contract for the supply of 80 h.p. to the Village was drawn up and submitted to the Village Trustees. After a representative had explained the various terms and conditions to them, the agreement was signed.

A money by-law was carried in May by a vote of 63 to 4 to provide a local distribution system based on estimates from the Commission.

An estimate was made of the cost of acquiring a municipal distribution system for the Village of Sunderland, which was submitted for use in preparing a money by-law to cover their construction. This by-law carried in May by a vote of 63 to 4.

Sunderland will receive their supply of power from the development of Wasdells Falls.

Tavistock

Revised estimates were prepared of the cost of delivering power to Tavistock in accordance with the 1913 loads. It was found that due to the increased load on the Niagara system 300 h.p. could be delivered to Tavistock at an estimated cost of $37.00 per h.p. per year for power delivered at a voltage suitable for distribution within the municipality. This proposition was submitted to the local authorities. A further estimated cost of $39.50 per h.p. per year for 265 h.p. delivered under the same conditions was submitted. Much correspondence has passed in regard to the question of power to Tavistock and a representative of the Commission has visited the village a number of times to discuss this matter, but as yet no definite steps have been taken by the municipality.

Terra Cotta

In response to requests from brick manufacturers asking the cost of power delivered to their plants near Terra Cotta, a number of estimates were prepared of the cost of giving this service, the results of which have been submitted.

Thamesville

After making a study of the power in Thamesville, a representative reported 200 h.p. to be in use in that municipality, which quantity would probably be increased to 220 h.p. in the near future. In the event of the town contracting with the Commission for a supply of power, a probable initial load of 100 h.p. could be

obtained from a municipal Hydro-Electric system. Estimates of the cost of transmitting this power to Thamesville from the Kent transformer station have been prepared, and will be submitted to the local authorities in the near future.

Thamesford

A representative visited Thamesford and obtained data from which to place orders for materials for their municipal distribution system. These orders have been placed, at the request of the village, and as soon as materials arrive, construction work will be started. It is anticipated that everything will be in readiness to receive power by the time the line, at present under construction from London, is completed.

Thedford

See report on Ailsa Craig.

Thorold

A request was received from a manufacturer, asking for prices on 1,000 and 2,000 h.p, delivered to his plant near Thorold. The Town of Thorold also requested estimates on the cost of delivering 500 to 2,000 h.p. to them. Estimates were prepared and a cost of $14.00 per h.p. per year was submitted this rate to apply for any quantity over 500 h.p. provided 10,000 h.p. were taken in that district.

A survey was made of the power situation in this district and it was reported that with the municipality contracting with the Commission for a supply of power a probable initial lighting load of 100 h.p. could be obtained.

Tilbury

After investigating the power situation in Tilbury, a representative of the Commission reported that 690 h.p. was being used there, which amount would probably be increased to 840 h.p. in the near future. Should a contract be entered into with the Commission for a supply of power, a probable initial load of 250 h.p. could be obtained for a municipal system. Estimates have been prepared of the cost of transmitting this power to Tilbury from the Kent transformer station, and will be submitted to the municipality in the near future.

Tillsonburg

The results obtained from the co-operation of this Department with the Municipality on questions of operation, construction and soliciting new business has resulted very satisfactorily.

In recommending a schedule of rates for use in Tillsonburg after the standard form, a study was made of local conditions to ascertain the effects the suggested change would have. After going into the question at some length, the schedule was adopted as recommended.

A large number of lighting and power consumers have been added to the municipal system, and it is anticipated that more will come on in the immediate future. During the year their load has increased from 188 h.p. taken during October, 1912, to 208 h.p. taken during the last current month.

New Toronto

Acting on a resolution from the Council of the Village of New Toronto, an estimate was prepared of the cost of installing a local distribution system within their limits. They were advised that $6,272.00 would be required to

cover this work. An estimate was made of delivering 50 h.p. to the village, and an agreement covering that amount at an estimated cost of $28.00 per h.p. per year and at a voltage suitable for distribution through their streets was also submitted.

The enabling by-law was passed in June, and a money by-law in July, the latter authorizing the issuing of $8,000.00 of debentures. Both by-laws were carried by large majorities.

The power agreement was signed in July, and orders were immediately placed for the materials necessary for the construction of their local distribution system. Construction work is now going on under the supervision of the Department. Portions of this system have been completed, and were put into service during the last month covered by this report. The whole village will be getting service in the course of a very few weeks.

Toronto

During 1912, arrangements were made with the Toronto Electric Commissioners whereby they were to take care of the service to certain districts in York Township, located close to the city limits. A number of similar districts requested service of the Commission during the current year. Upon the receipt of each request, a study was made of the requirements of the district referred to, to ascertain the feasibility of giving the service. Wherever it appeared evident that revenues would be forthcoming to warrant the expense of making the construction, the Toronto Electric Commissioners were instructed to proceed with the work under the same conditions as had been arranged for the districts already served.

The question of fixing a rate for power to the City waterworks was referred to the Commission. A thorough investigation was made of the cost of pumping water, as well as the cost of supplying electrical power for this purpose. After considering all details carefully, a rate was finally arrived at which has been submitted and approved.

The growth of the load on the Toronto Hydro-Electric System has exceeded all expectations. The maximum load taken during 1912 was 13,037 h.p. while during the present year a demand of 17,997 h.p. was made.

Toronto Township

Toronto Township enjoys the distinction of being the first township to enter into a contract with the Commission for a supply of power.

Early in the year, a number of contracts were made for rural service in the southern part of the township, near Port Credit and Cooksville. It was arranged that the Village of Port Credit should assume the management and operation of the lines built by the Commission to serve these applicants. The number of consumers served by these rural lines began to rapidly increase, and a number of extensions and additional lines were required. This state of affairs began to develop early in the summer, and the township council, having become aware that a large rural system was being built up, proceeded to take steps to take over the operation and management of this system for themselves. An agreement was accordingly drawn up and signed covering the supply of power to the township.

The township system as already constructed consists of tthe following lines:—

Along the Lake Shore Road from Port Credit to the Toronto Golf Club, then north about one mile.

Along the Lake Shore Road from Port Credit to Clarksons, with a branch from Clarksons about one mile long.

Along the Centre Road from Port Credit, north about one mile.

Along the Centre Road from the Commission's Cooksville transformer station, north to Dundas Street, then east along Dundas Street through Cooksville Village and as far as the C.P.R. crossing.

Along the Gravel Road from Port Credit to the Mississaga Golf Club.

All of these lines have been constructed for the township and placed in operation, and further extensions are to be constructed immediately..

Tottenham

See report on Alliston.

Uxbridge

The enabling by-law was submitted at the January elections and carried by a large majority. Prior to this representatives visited Uxbridge and assisted the local authorities in bringing the Hydro-Electric question before the people, addressing a number of public meetings in the interest of the cause. A number of estimates were prepared of the cost of serving Uxbridge along with other municipalities in that district. None of these have been submitted, pending the action to be taken on the municipal railway scheme which will greatly reduce the cost of the supply to the municipality if it is carried out.

Vineland

See Report on St. Ann's District.

Wallaceburg

The power situation in Wallaceburg was investigated by a representative who reported that, should the municipality contract with the Commission for a supply of power, a probable initial load of 225 h.p. could be obtained for a municipal Hydro-Electric system. Should certain large users of gas engines become customers, a demand of about 2,700 h.p. would result.

Walkerville

In investigating the power conditions in Windsor, Walkerville was also visited, and a complete report prepared on the situation there. It was learned that 2,263 h.p. was being used in Walkerville and Ford City, which amount was expected to increase to about 3,000 h.p. in the near future. With the municipality contracting with the Commission for a supply of power a probable load of 1,500 h.p. could be obtained for their municipal system.

At the request of the town an estimate was prepared of the cost of installing a power and lighting distribution system within their limits. A study was made of their local conditions, and an estimated cost of $58,259.00 was submitted. This estimate included the cost of street lighting, house lighting and power distribution systems covering the whole town, but did not include the cost of underground work in the business section.

A form of contract covering the delivery of 1,500 h.p. to Walkerville at an estimated cost of $38.00 per h.p. per year was drawn up and submitted. A representative has also visited Walkerville and discussed with the local authorities the proposed contract, their proposed money by-law and other questions pertaining to Hydro-Electrical power.

Wardsville

The power situation in Wardsville was investigated by a representative who reported 15 h.p. to be in use there, which amount it was proposed to increase to 35 h.p. in the near future. With the village contracting with the Commission for a supply of power a lighting load of approximately 25 h.p. could be obtained for their municipal system.

Waterdown

A request was received from the village asking permission to serve certain residents outside of the village limits. After investigating the proposition, permission was granted, the rates charged for service to be approved by the Commission.

At regular intervals during the year, a representative has visited the village, and advised the local authorities on questions of operation and construction. It was shown wherein a saving could be made in a number of details, and instructions were given to this end. Waterdown has continued to carry a load on their system of 40 h.p. In addition to this load the Dominion Sewer Pipe Company, who take power directly from the Commission near Waterdown, have increased their demand to 248 h.p. Waterdown benefits thereby.

Waterford

The enabling by-law was submitted to the ratepayers at the January, 1913, elections and carried. An estimated cost of $33.00 per h.p. per year had been submitted, this estimate having been made on the asumption that Simcoe would also take power which would be supplied from the Brant station. A representative visited Waterford and investigated the power possibilities. With the small amount of power in sight and the necessity of interesting other municipalities no further action has been taken.

Watford

A representative having investigated the power situation in Watford, reported 340 h.p. to be in use there. With the municipality contracting with Commission for a supply of power, the probable load that could be obtained would be small. Estimates will be prepared, however, of the cost of transmitting power to Watford, in connection with other municipalities in this district.

Waterloo

The load on the Waterloo municipal system has continued to show a very satisfactory growth, having increased from 388.5 h.p. taken during October, 1912, to 469 h.p. A representative who has visited Waterloo at various times has reported their electrical department to be in a very satisfactory condition, both as to the construction and as to management and operation.

Waterloo Township

A resolution was received from the Council of the Township of Waterloo asking for an estimated cost of delivering 200 h.p. to Breslau. Estimates were accordingly prepared and a rate of $35.00 per h.p. per year submitted for power suitable for distribution through the village.

A meeting was addressed in this township where the question of supplying Hydro-Electric power to the farms was discussed. In connection with Breslau, estimates were made of the cost of giving rural service from that line. A schedule of rates based on this estimated cost was then prepared, and steps are being taken to deliver power to the farmers in that portion of the township.

See report on Breslau.

Waubaushene

See report on Tay Township.

Welland

A form of agreement covering the supply of 400 h.p. to the Town of Welland was drawn up and signed, arrangements having been made and the proper agreement having been entered into with the Ontario Power Company for the delivery of this power.

By resolution of the Council, the Commission were requested to proceed with the construction of a power and lighting distribution system in the town, it having been agreed that the Commission would build their distribution system, and hand it over in operating condition. A construction engineer was immediately placed in the town and proceeded to lay out plans and place orders for materials.

The Ontario Power Company owned and operated a power distribution system and a transformer station in the town, by means of which power service was given to a number of manufacturers. It was proposed to acquire this system for the town and extend it to give lighting and street lighting service. Negotiations were accordingly entered into with the company towards this end. A valuation was made of this system, and a study was made of the extent of its operations. It was finally arranged that the company should sell their sub-station and distribution system in the town of Welland, and also their 2,200 volt line to Port Robinson with their distributing equipment in that Village. In disposing of this distributing systems, all contracts with consumers of light and power were also assigned to the Town of Welland.

Having completed these arrangements the work of rebuilding and extending this system was immediately put in hand, and carried through to completion.

Welland now enjoys well lighted streets and is doing a good power and lighting business. Though their contract covers the delivery of 400 h.p. this amount has already been exceeded, and the prospects of additional load are such that arrangements are at present being made to increase the capacity of their transformers and lines to give this added service.

With the purchase of the equipment of the Ontario Power Company at Port Robinson, it was arranged that Welland should assume the ownership of this extension, and handle all business arising out of it. The agreement for the supply of power to the Standard Steel Construction Company at Port Robinson, was also assigned to Welland. (See report on Port Robinson.)

Wellandport

See report on St. Ann's District.

Wellesley Township

A representative visited the different villages in the townships of Woolwich and Wellesley, to investigate their several power requirements. This report covered the conditions in St. Clements, Heidelburg, St. Jacob's, Conestogo, Floradale, West Montrose and Winterbourne.

Weston

Assistance was given Weston on various matters of operation and management. A great many consumers have been added to their lists, necessitating changes and extensions to their distribution system. The extent to which their business has increased is shown in the records of the loads taken by Weston during the different months of the year. A steady increase is to be noted from month to month, the demand of 100 h.p. taken during October, 1912 having grown to 151 h.p. during the last current month.

Wheatley

After visiting Wheatley and looking into the question of supplying power there, a representative reported that 165 h.p. was being used. Estimates have been prepared of the cost of transmitting power to Wheatley and will be submitted to the municipality in the near future.

Wilmot Township

In response to a request from the Farmers' Club a representative addressed a public meeting at New Dundee in reference to power in rural districts. As a result of this meeting petitions are being circulated through the township. While in New Dundee, the local power conditions were investigated, all of which were covered in a report.

Winchester

A form of agreement for the supply of 100 h.p. to the Village of Winchester at an estimated cost of $24.00 per h.p. per year, was submitted to the Council for their approval. A representative met the Council for the purpose of explaining the various details of this agreement to them, after which the contract was signed.

It was estimated that $10,650 would be required to cover the cost of a local distribution system in Winchester. The Council were advised of this and a money by-law to authorize the isuing of debentures for this amount was submitted to the ratepayers, and carried by a vote of 154 to 4.

Acting in the capacity of consulting engineers for the village, orders have been placed for materials for the construction of their local distribution and street lighting systems, and construction work is now under way.

Windsor

A form of agreement for the supply of 2,500 h.p. to the City of Windsor was prepared and submitted. This power was to be supplied at an estimated cost of $38.00 per h.p. per year. After discussing the agreement at length with the city authorities, a contract was finally signed.

Immediately after this a representative visited Windsor for the purpose of obtaining complete details, preliminary to laying out power and lighting distribution, and street lighting systems. Information was obtained as to the location of water and gas mains, and also the conduit and overhead systems of telephone, telegraph, distribution and railway companies. An estimate was then prepared of the cost of installing a distribution system to give lighting, power and street lighting service, including ornamental street lights with underground mains in the business section, which was submitted to the local authorities.

Plans for the construction of their distribution system are now in the course of preparation with the intention of commencing work at an early date.

Woolwich Township

See report on Wellesley Township.

Woodslee

It was reported by a representative who visited Woodslee, that 50 h.p. was being used there, which amount was about to be increased to 85 h.p. With the municipality contracting with the Commission for a supply of power, a probable initial load of 35 h.p. could be obtained for their system.

Woodbridge

Estimates were prepared of the cost of delivering power to Woodbridge and a rate of $43.00 per h.p. per year for 100 h.p. suitable for distribution within the municipality was submitted to the local authorities. A number of other estimates were prepared in an endeavor to get a lower rate, by using some different scheme of transmission. This was found to be impossible under the present load conditions in this district.

A private company had made a proposition to the Village of Woodbridge to supply them with power. The proposed agreement drawn up by this company was submitted to the Commission for comment. The various details of the agreement were analyzed and a report was made to the village advising them wherein changes should be made.

Woodstock

The Commission having obtained contracts with certain rural consumers in the township of East Oxford, near Woodstock, the City of Woodstock were requested to take care of this service. It was agreed that the Commission would construct the necessary lines and other equipment to give this service, while Woodstock would assume their operation and management, collecting all revenues at rates approved by the Commission. This service is now being given.

Advice was given the local authorities on various questions of management and operation on which they required assistance. The electrical business in Woodstock continues to be carried on in a very satisfactory manner.

At the present time work is in progress of removing pole lines from their business streets, and arranging to give service from the lanes and alleys running along the back of the consumers' premises.

Woodville

The enabling by-law was carried in Woodville, there being only one dissenting vote. In laying this by-law before the people, a representative addressed meetings on behalf of the local authorities, explaining Hydro-Electric matters.

A form of agreement for the supply of 70 h.p. to the Village of Woodville was drawn up and submitted, which was afterwards signed. The privately owned plant was valued and an estimate of the cost of reconstructing same was prepared and submitted to the village Council with the recommendation that $4,000.00 be raised to cover this work. A by-law authorizing a debenture issue for that amount was accordingly submitted to the ratepayers and carried.

Wyoming

After making a survey of the power situation in Wyoming, a representative reported 115 h.p. to be in use there. In the event of a contract being signed with the Commission for a supply of power, a probable initial load of 50 h.p. could be obtained for a municipal Hydro-Electric system. Estimates of the cost of transmitting power to Wyoming are to be prepared and submitted in the near future.

York Township

It is noted in the 1912 report that arrangements were made with the Toronto Electric Commissions to give service to certain districts in the Township of York, adjacent to the limits of the city of Toronto. During the year a number of similar districts have applied for service. Whenever conditions warranted the outlay, steps were taken to have these district connected up as extensions to the Toronto Hydro-Electric System. (See report on Toronto.)

Zorra East Township

A petition was received from the Township of East Zorra having 343 names, and asking for an estimate of the cost of service to take care of 5,033 lights and 812 h.p. of motors. To become conversant with all details, a representative went over the whole township and noted the exact location of each petitioner, and conditions to be overcome in giving service, together with all other information of value. Estimates of the cost of this service are at present in the course of preparation.

Zurich

See report on Ailsa Craig.

MUNICIPAL ACCOUNTS

The work of standardizing the Electrical Accounts of the Hydro-Electric municipalities, which was started in 1912, has been carried on. Books have been opened in Seaforth, Elmira, Barrie, Midland, Penetanguishene, Berlin, Collingwood, Milton, Port Dalhousie, Stayner, Coldwater, Elmvale, Beachville, Welland, Hagersville, Caledonia, Dundas, Waterdown, Acton, Georgetown and Rockwood, and the local officers instructed in the proper handling of same.

A revision has also been made of the Electrical Accounts of Port Arthur and Ottawa, bringing them into harmony with the standard.

A periodical inspection has been made of the Electrical Accounts of all the Hydro-Electric municipalities, our accountants assisting the local officers by suggesting better or simpler methods of office routine, and in the case of the smaller towns and villages, where the utility is in charge of men of little or no bookkeeping experience, actually doing all of the accounting and most of the billing.

A system of monthly balance sheets and operating reports has been inaugurated, which has enabled the Provincial Commission to keep in close touch with the local conditions, and this report has been an influence towards a better and more businesslike administration, and is overcoming a natural indifference on the part of officers in the keeping of records from which a report is required but once a year.

From these reports and other data which is collected or worked up by the Auditors of Municipal Accounts, the capital costs and operating expenses are divided into the principal revenue accounts, Domestic Light, Commercial Light, Power and Street Light, these in turn being set against the respective revenues, for the purpose of rate adjustment.

This makes it possible for the Hydro-Electric Power Commission to authorize and enforce a schedule of selling rates in each municipality which makes each of the above named revenue departments self-supporting, so that an excessively high rate in one does not take care of a deficit in another, to the manifest advantage of the latter.

One of the ultimate benefits of these reports anticipated, is a friendly rivalry between the municipalities for an increased load, an efficient and economical administration, and an intelligent effort to improve the load factor which, more than anything else, makes possible reductions in the rates.

The five statistical reports which follow were prepared to give a comprehensive view of the present status and operating results of the electric utilities in the forty-five municipalities where the service has been installed long enough to justify a report.

Statement "A" is a comparative condensed Balance Sheet as of January 1st, 1914, showing the plant cost in natural sub-divisions, and other items making up the total assets. The Liabilities have been divided into two groups, one showing actual liabilities such as Debenture balance, Accounts Payable and Bank Overdraft, and the other Reserve accounts such as Debentures Paid, Sinking Fund Reserve, Depreciation Reserve and Surplus. As it is the practice of the Municipalities to invest the Depreciation Reserve in plant extension rather than placing the money in bank at a low rate of interest and issuing new debentures for extensions at a high interest rate, the total credits to Depreciation reserve and Surplus really show the plant constructed from revenue, or Uncapitalized Plant.

Statement "B" is a condensed operating report for the year ending Dec. 31st, 1913, showing the net result in each municipality. In some cases where the power was turned on subsequent to January 1st, the proportion of the annual fixed charges corresponding to the period of operation has been used, and in other municipalities where the operation covers a very short period, and no actual payment has been made, the fixed charges have been omitted entirely to simplify the accounting in future years and avoid the necessity for annual adjustments.

In some municipalities where it requires from six weeks to two months to close the books for the year, we have used figures taken from the trial balances, which are substantially correct but subject to revision on final audit.

A municipality is not considered self-sustaining unless the revenues are sufficient to meet all ordinary operation and maintenance charges, all the interest, sinking fund or principal payments on debentures, and additions to plant to the extent of 5 per cent. of the capital in lieu of depreciation.

A study of this statement "B" will show that in but one instance has the revenue been insufficient to meet all operating, maintenance and fixed charges, and in but two others has the surplus revenue been insufficient to provide for proper depreciation. In some cases where the operation was for a very short period it has not been considered proper to charge depreciation.

Statement "C" shows in detail the comparative revenues and divisions of expense so that an intelligent comparison may be made of the operation in municipalities of approximately the same size, or where the conditions are known to be similar. In comparing the cost of power purchased the varying price per horse-power must be taken into consideration.

Statement "D" showing the revenue for the years 1912 and 1913, and the number of customers in each class of service at the end of each year is intended to illustrate the rapid expansion of the service in the municipalities where the operation covers a period of two years or longer.

Statement "E" is prepared to show the approximate installation and annual cost per lamp and per capita of the street lighting service in cities, towns and incorporated villages where Hydro service has been installed. The figures are for the calendar year ending December 31st, 1913.

In addition to the information given in detail in these statements, the following summation is of particular interest and value, as it is the answer of the Municipalities to their experiment in the Municipal distribution of Hydro power:—

	Dec. 31st, 1912.	Dec. 31st, 1913.
Number of municipalities included in report	28	45
Operating and maintenance expenses	$1,086,135 00	$1,511,048 00
Debenture charges and interest	291,033 00	479,995 00
Total annual expense	1,377,168 00	1,991,043 00
Total revenue	1,617,674 00	2,611,918 00
Gross surplus for year	240,506 00	620,875 00
Depreciation charge	179,847 00	230,480 00
Net balance, profits in excess of depreciation	60,659 00	390,395 00
Total plant value	6,349,711 00	9,196,483 00
Net debenture debt and overdraft	5,882,156 00	8,353,819 00
Accumulated gross surplus, invested in plant extension	.....	861,381 00
Accumulated depreciation reserve	.....	410,327 00
Net surplus from operation	.....	451,054 00
Approximate number of consumers—Light	33,568	63,157
" " " Power	1,399	2,532
Total	34,967	65,689

STATE

Comparative Condensed Balance Sheets of Electric Departments

——	a Toronto	Ottawa	a Hamilton	London
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	361,853 70	69,958 53	30,677 72	34,784 12
Sub-Station Equipment	365,360 67	75,277 83	18,230 42	75,742 82
Distribution System, Overhead	1,273,873 85	234,128 27	224,662 72	229,605 94
Underground System	540,772 34	70,812 38	25,808 65	.....
Line Transformers	231,868 56	72,016 15	56,030 69	24,594 84
Meters	269,551 16	76,947 05	73,122 68	77,857 33
Street Light Equipment	714,385 02	81,928 55	31,512 39	34,661 57
Miscel. Equip. and Const'n Expense	162,144 50	22,053 88	84,391 84	38,046 18
Steam Plant or Hydraulic Developmt	.....	.....	.....	.....
Old Plant Account	g 649,811 10	.....	2,000 00	.....
Total Plant	4,569,620 90	703,122 64	546,437 11	590,769 16
Inventories	311,488 91	10,233 72	38,946 65	28,479 87
Accounts Receivable	357,710 44	35,000 00	27,830 06	46,996 49
Sinking Fund	.....	66,619 57	18,531 87	.....
Other Assets	150,038 78	.....	.....	.....
Bank Balance and Cash	257,998 78	102,134 14	.....	11,413 65
Total Assets	5,646,857 81	917,110 07	631,745 69	602 182 81
LIABILITY AND RESERVE ACCOUNTS				
Debenture Balance	4,773,783 90	650,000 00	505,000 00 c	481,900 00
Accounts Payable	427,005 24	18,397 10	30,647 44	65,164 91
Bank Overdraft	.....	.....	54,421 14	.....
Other Liabilities	102,422 22	.....	5,396 00	752 00
Total Liabilities	5,303,211 36	668,397 10	595,464 58	547,816 91
Debentures Paid	.....	.....	.....	.....
Sinking Fund Reserve	.....	66,619 57	18,531 87	.....
Depreciation Reserve	171,903 68	156,728 30	8,597 09	21,716 32
Surplus	171,742 77	25,365 10	9,152 15	32,649 58
Total Reserves	343,646 45	248,712 97	36,281 11	54,365 90
Total	5,646,857 81	917,110 07	631,745 69	602,182 81

MENT "A"

of Hydro Municipalities as of January 1st, 1914

Berlin	a Pt. Arthur	St. Thomas	Guelph	Stratford	Galt	Woodstock
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
21,344 64	.....	9,676 56	17,346 11	16,837 50	10,230 85	7,331 95
54,847 73	219 89	28,426 76	53,239 13	20,779 41	15,145 48	26,870 13
69,688 70	118,326 45	56,575 75	31,766 69	74,403 84	77,483 93	28,907 57
.....	.....	.....	.....	.....	32,918 23	.....
24,281 17	5,644 05	11,076 90	6,355 98	12,897 73	14,831 91	15,638 52
25,495 55	14,869 90	14,930 85	15,977 58	13,526 22	16,826 68	12,009 27
18,004 26	21,639 51	11,553 31	22,254 45	5,971 43	7,694 03	10,047 72
5,953 74	3,770 05	3,229 05	6,513 12	7,828 37	5,993 11	15,805 26
.....	381,432 72	.....	.....	.....	.....	15,743 62
47,610 01	.....	7,794 75	.....	11,187 00	.....	.....
267,225 80	545,902 57	143,263 93	153,453 06	163,431 50	181,124 22	132,354 04
4,447 31	.....	.....	47,673 54	1,537 94	636 35	191 65
6,584 65	.....	10,924 35	8,770 52	6,933 63	.....	.....
.....	.....	.....	.....	6,806 17	10,582 92	28,858 51
40,893 63	.....	.....	396 50	263 82	.....	.....
3,767 13	.....	21,967 29	3,178 10	350 12	.....	9,534 36
322,918 52	b	176,155 57	213,471 72	179,323 18	192,343 49	170,938 56
257,659 13	c 496,500 00	94,039 74	119,084 02	128,470 00	136,000 00	107,385 63
8,384 27	.....	5,958 17	3,272 91	11,662 22	.....	.....
.....	.....	.....	.....	430 00	25,667 34	.....
.....	.....	.....	.....	.....	.....	.....
266,043 40	.....	99,997 91	122,356 93	140,562 22	161,667 34	107,385 63
42,490 87	.....	16,960 26	25,865 97	15,330 00	.....	.....
.....	.....	.....	.....	6,806 17	10,582 92	28,858 51
.....	.....	15,818 44	37,846 12	12,493 42	14,900 00	9,442 40
14,384 25	.....	43,378 96	27,402 70	4,131 37	5,193 23	25,252 02
56,875 12	.....	76,157 66	91,114 79	38,760 96	30,676 15	63,552 93
322,918 52	b	176,155 57	213,471 72	179,323 18	192,343 49	170,938 56

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

——	Collingwood	Barrie	Welland	Ingersoll
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	4,343 60	12,034 61	5,156 40	3,057 57
Sub-Station Equipment	42 80	20,535 59	8,017 13	10,232 56
Distribution System Overhead	23,438 67	16,107 32	35,569 34	28,350 21
Underground System	.....	.....	.....	.....
Line Transformers	4,697 25	3,032 71	9,517 57	6,587 48
Meters	7,524 05	13,400 87	5,264 74	6,740 80
Street Light Equipment	2,400 03	1,823 96	1,764 27	2,273 84
Miscel. Equip. and Const'n Expense.	4,631 89	757 49	5,655 38	8,253 30
Steam Plant or Hydraulic Developmt.	.....	31,212 48	.....	.....
Old Plant Account	5,455 75	.....	.....	22,368 53
Total Plant	52,534 04	98,905 03	70,944 83	87,864 29
Inventories	939 68	2,789 01	979 11	805 63
Accounts Receivable	1,918 23	3,881 65	209 49	10,358 54
Sinking Fund	.....	.....	.....	4,664 10
Other Assets	.....	.....	.....	.....
Bank Balance and Cash	5,821 88	3,751 54	131 28	.....
Total Assets	61,213 83	109,327 23	72,264 71	103,692 56
LIABILITY AND RESERVE ACCOUNTS				
Debenture Balance	37,950 42	55,755 06	d.....	79,800 00
Accounts Payable	5,431 47	978 70	71,301 37	945 62
Other Liabilities	.....	.....	704 72	10,909 10
Bank Overdraft	4 64	16 44	.....	.....
Total Liabilities	43,386,53	56,750 20	72,006 09	91,654 72
Debentures Paid	14,415 60	31,244 94	.....	.....
Sinking Fund Reserve	.....	.....	.....	4,664 10
Depreciation Reserve	2,390 00	3,350 00	.....	2,862 00
Surplus	1,021 70	17,982 09	258 62	4,511 74
Total Reserves	17,827 30	52,577 03	258 62	12,037 84
Total	61,213 83	109,327 23	72,264 71	103,692 56

"A"—Continued

of Hydro Municipalities as of January 1st, 1914

Midland	Waterloo	Dundas	Preston	Penetang	St. Mary's	Brampton
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
4,780 69	4,646 71	.....	.....	2,151 00	13,674 27	3,808 08
8,407 78	11,600 73	2,060 66	12,076 92	3,507 71	12,909 54	5,181 32
28,904 82	29,977 46	32,550 60	27,687 13	22,801 32	17,621 88	30,628 36
.....	.....	.....	.....	.....	.....	.....
6,661 19	6,766 62	5,436 92	11,345 64	3,343 58	9,877 87	8,779 81
9,416 34	6,030 43	5,476 70	8,890 62	4,400 93	6,582 18	7,998 00
3,421 85	4,095 33	502 81	1,903 86	1,607 91	2,148 40	1,714 47
3,500 58	1,389 00	3,522 21	4,708 43	278 93	1,601 75	2,895 62
.....	2,483 64	.....	.....	.....	.....	.....
7,382 84	10,131 25	.....	24,007 28	2,940 00	.....	.....
72,476 09	77,121 17	49,549 90	90,619 88	41,031 38	64,415 89	61,005 66
90 06	971 59	3,467 33	.....	411 43	200 00	372 34
.....	2,615 55	.....	6,435 01	.....	1,715 00	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	229 95	15,000 00
6,707 06	.....	.....	.....	.....	7,427 19	.....
79,273 21	80,708 31	53,017 23	97,054 89	41,442 81	73,988 03	76,378 00
42,997 23	53,507 14	19,629 72	55,986 64	29,490 67	43,779 84	66,593 77
578 64	942 18	.....	1,626 88	.....	9,476 77	.....
.....	3,272 39	28,425 90	21,170 65	1,892 14	.....	1,200 08
.....	.....	.....	150 47	.....	.....	.....
43,575 87	57,721 71	48,055 62	78,934 64	31,382 81	53,256 61	67,793 85
10,752 77	1,916 86	370 28	3,878 87	1,509 33	17,177 88	2,456 87
.....	.....	.....	.....	.....	.....	.....
5,800 00	7,950 00	1,508 00	6,348 34	3,485 00	.....	5,200 00
19,144 57	13,119 74	3,083 33	7,893 04	5,065 67	3,553 54	927 28
35,697 34	22,986 60	4,961 61	18,120 25	10,060 00	20,731 42	8,584 15
79,273 21	80,708 31	53,017 23	97,054 89	41,442 81	73,988 03	76,378 00

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

——	Tillsonburg	Hespeler	Mitchell	Weston
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	1,896 47	3,499 23	4,217 24	3,230 94
Sub-Station Equipment	6,818 47	8,500 83	9,034 86	4,985 23
Distribution System, Overhead	17,522 44	5,702 58	5,981 19	9,723 63
Underground System	.....	.....	.....	.....
Line Transformers	4,041 90	4,025 26	823 82	4,158 10
Meters	3,613 36	3,594 78	1,518 97	2,779 93
Street Light Equipment	1,762 50	718 95	461 41	1,361 12
Miscel. Equip. and Const'n Expense	918 83	93 08	.....	2,896 21
Steam Plant or Hydraulic Developmt.	.....	.....	1,500 00	.....
Old Plant Account	.....	3,000 00	.....	.....
Total Plant	36,573 97	29,134 71	23,537 49	29,135 16
Inventories	234 43	508 82	584 59	86 70
Accounts Receivable	3,668 22	250 00	1,409 64	632 07
Sinking Fund	.....	.....	.....	.....
Other Assets	1,500 00	e 1,797 07	.....	.....
Bank Balance and Cash	414 95	.....	.....	91 86
Total Assets	42,391 57	31,690 60	25,531 72	29,945 79
LIABILITY AND RESERVE ACCOUNTS				
Debenture Balance	34,971 49	18,899 82	11,684 02	18,626 50
Accounts Payable	1,600 00	11,120 09	.....	543 78
Bank Overdraft	.....	.....	732 17	.....
Other Liabilities	.....	.....	.....	.....
Total Liabilities	36,571 49	30,019 91	12,416 19	19,170 28
Debentures Paid	1,028 51	1,670 69	3,167 76	1,341 38
Sinking Fund Reserve	.....	.....	.....	.....
Depreciation Reserve	2,606 50	.....	2,177 21	2,650 00
Surplus	2,185 07	.....	7,770 56	6,784 13
Total Reserves	5,820 08	1,670 69	13,115 53	10,775 51
Total	42,391 57	31,690 60	25,531 72	29,945 79

"A"—Continued

of Hydro Municipalities as of January 1st, 1914

Milton	Seaforth	Georgetown	Acton	New Hamburg	Mimico	Pt. Dalhousie
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	1,194 00	12 00	1,500 00	2,257 59	98 30	.....
4,940 19	6,031 75	.....	597 62	1,054 90	.....	.....
8,758 21	13,325 50	9,464 24	4,515 63	7,865 33	10,563 83	2,191 89
.....	.....	.....	.....	.....	.....	.....
872 43	2,589 49	1,978 76	1,310 00	2,664 75	965 88	1,732 75
2,291 32	2,854 15	2,235 98	1,347 00	2,578 62	2,740 79	185 71
935 43	797 34	903 94	886 81	1,077 93	543 90	220 95
2,061 49	310 98	669 51	777 99	903 53	694 38	386 66
.....	.....	.....	.....	.....	.....	.....
4,318 66	.....	2,750 05	.....	5,324 56	.....	6,325 50
24,177 73	27,103 21	18,014 48	10,935 05	23,727 21	15,607 08	11,043 46
113 00	1,038 98	.....	187 00	559 00	375 37	145 50
3,675 84	66 01	341 66	.....	3,776 79	82 05	1,246 67
.....	909 33	.....	3,752 00	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
321 83	745 65	2,951 30	663 05	.....	398 13	72 58
28,288 40	29,863 18	21,307 44	15,537 10	28,063 00	16,462 63	12,508 21
23,145 10	21,000 00	20,000 00	14,500 00	17,151 94	14,685 80	d
798 00	.....	.....	.....	462 00	211 25	11,957 44
.....	4,000 00	.....	.....	3,234 39	.....	.....
.....	.....	.....	.....	.....	.....	.....
23,943 10	25,000 00	20,000 00	14,500 00	20,848 33	14,897 05	11,957 44
1,173 56	909 33	.....	.....	1,714 11	314 20	.....
.....	.....	.....	202 00	.....	.....	.....
900 00	1,300 00	300 00	500 00	2,045 00	740 00	450 00
2,271 74	2,653 85	1,007 44	335 10	3,455 56	511 38	100 77
4,345 30	4,863 18	1,307 44	1,037 10	7,214 67	1,565 58	550 77
28,288 40	29,863 18	21,307 44	15,537 10	28,063 00	16,462 63	12,508 21

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

	Norwich	Hagersville	Baden	Stayner
ASSETS				
Lands and Buildings	655 00	.....	660 64	.....
Sub-Station Equipment	.....	.....	.....	.....
Distribution System Overhead	6,373 65	5,177 94	3,416 34	1,211 03
Underground System	.....	.....	.....	.....
Line Transformers	828 37	264 30	606 38	300 00
Meters	1,717 47	400 11	514 55	635 78
Street Light Equipment	520 56	359 56	342 72	86 31
Miscel. Equip. and Const'n Expense	680 54	346 40	.....	128 40
Steam Plant or Hydraulic Developmt.	.....	.....	.....	.....
Old Plant Account	3,509 82	.....	.....	7,657 15
Total Plant	14,285 41	6,558 31	5,540 63	10,018 67
Inventories	716 13	.....	.....	33 75
Accounts Receivable	1,557 53	.....	.....	336 86
Sinking Fund	.....	.....	.....	.....
Other Assets	.....	.....	.....	.....
Bank Balance and Cash	.....	.....	330 43	866 87
Total Assets	16,559 07	6,548 31	5,871 06	11,256 15
LIABILITY AND RESERVE ACCOUNTS				
Debenture Balance	13,422 51	6,000 00	4,843 68	8,755 34
Accounts Payable	1,044 85	357 81	115 22	2,186 72
Bank Overdraft	132 12	164 25	.....	.....
Other Liabilities	.....	.....	.....	.....
Total Reserves	14,599 48	6,522 06	4,958 90	10,942 06
Debentures Paid	333 49	.....	156 32	244 66
Sinking Fund Reserve	.....	.....	.....	.....
Depreciation Reserve	500 00	.....	277 00	.....
Surplus	1,126 10	26 25	478 84	69 43
Total	1,959 59	26 25	912 16	314 09
Total Liabilities	16,559 07	6,548 31	5,871 06	11,256 15

a Approximate figures. Regular audit not completed.

b Accounts not yet separated from City books, and no separate balance sheet.

c Total debenture issue. Credits from payments on principal and sinking fund still in City books.

"A"—Concluded

of Hydro Municipalities as of January 1st, 1914

Caledonia	Coldwater	Pt. Stanley	Elmvale	Water-down	Rockwood	Beachville	Pt. Credit
.....	275 00	1,195 99	106 25	.....	79 00	161 03	675 00
.....	.....	.....	.....	.....	.....	.....	.....
3,468 28	5,179 40	8,635 69	5,369 35	5,323 22	3,533 29	6,238 17	6,428 27
.....	.....	.....	.....	.....	.....	.....	.....
318 00	797 57	1,169 56	268 85	1,056 10	894 50	604 85	439 12
378 57	972 07	1,553 58	773 70	789 34	488 13	579 83	1,126 28
161 65	354 20	570 60	298 93	116 96	254 58	237 03	254 09
545 31	132 53	5,517 16	605 93	88 34	277 01	540 36	610 26
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1,000 00	.....	.....	.....	.....	.....
4,871 81	7,710 77	19,642 58	7,423 01	7,373 96	5,526 51	8,361 27	9,533 02
.....	.....	.....	.....	.....	56 76	50 00	18 46
.....	1,849 84	.....	36 00	.....	.....	1,502 85	371 06
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
127 82	.....	2,584 50	.....	274 45	.....	2,972 79	609 80
4,999 63	9,560 61	22,227 08	7,459 01	7,648 41	5,583 27	12,886 91	10,532 34
d	7,000 00	18,153 58	6,894 64	6,303 41	2,000 00	5,360 00	7,268 56
4,410 95	.....	.....	69 75	.....	.....	6,013 07	1,300 83
.....	1,690 60	.....	344 68	.....	3,034 13	.....	208 10
.....	.....	.....	.....	.....	.....	.....	.....
4,410 95	8,690 60	18,153 58	7,309 07	6,303 41	5,034 13	11,373 07	8,777 49
.....	.....	796 42	105 36	196 59	.....	f	231 44
.....	.....	.....	.....	.....	.....	.....	.....
250 00	375 00	1,388 08	.....	365 00	.....	525 00	446 00
338 68	495 01	1,889 00	44 58	783 41	549 14	988 84	1,077 41
588 68	870 01	4,073 50	149 94	1,345 00	549 14	1,513 84	1,754 85
4,999 63	9,560 61	22,227 08	7,459 01	7,648 41	5,583 27	12,886 91	10,532 34

d Debentures issued but not sold at date of report.
e Includes $1,737.07 accumulated operating losses due to maintenance of steam plant.
f Amount paid on debentures not yet separated from surplus.
g Work orders incompleted and Exhibition.

STATE

Report showing operation of Municipalities

Municipality.	Plant Cost	Debentures and Overdraft	Operation and Maintenance	Fixed Charges	Total Operation
	$ c.	$ c.	$ c.	$ c.	$ c.
Toronto.....(a)	3,919,809 80	5,149,803 65	670,082 78	239,951 08	910,033 86
Ottawa.....	703,122 64	500,000 00	111,322 00	30,961 54	142,283 54
Hamilton.....(a)	546,437 11	486,468 13	74,514 40	17,416 18	91,930 58
London.....	590,769 16	481,900 00	126,323 86	28,831 47	155,155 33
Berlin.....(g)	267,225 80	257,659 13	51,292 70	17,897 45	69,190 15
Port Arthur.....(a)	545,902 57	496,500 00	68,282 71	38,409 37	106,692 08
St. Thomas.....	143,263 93	94,039 74	41,561 36	7,402 65	48,964 01
Guelph.....	153,453 06	119,084 02	47,294 58	10,273 27	57,567 85
Stratford.....	163,431 50	121,663 83	31,808 58	10,536 75	42,345 33
Galt.....	181,124 22	151,084 42	23,563 01	9,721 64	33,284 65
Woodstock.....	132,354 04	78,527 12	28,598 86	6,853 83	35,452 69
Collingwood.....	52,534 04	37,950 42	13,492 17	4,277 77	17,769 94
Barrie.....	98,905 03	55,755 03	17,540 63	5,590 40	23,131 03
Welland.....	70,944 83	64,016 63	6,660 53	711 19	7,371 72
Ingersoll.....	87,864 29	75,135 90	16,313 16	5,337 25	21,650 41
Midland.....	72,476 09	42,997 23	9,289 07	4,134 55	13,423 62
Waterloo.....(g)	77,121 17	53,507 14	17,830 01	3,675 97	21,505 98
Dundas.....	49,549 90	48,055 62	6,001 12	1,970 14	7,971 26
Preston.....	90,619 88	77,157 29	21,468 32	4,120 54	25,588 86
Penetang.....	41,031 38	29,490 67	9,319 95	2,035 90	11,355 85
St. Mary's.....	64,415 89	49,555 89	14,183 25	4,616 15	18,799 40
Brampton.....	61,005 66	67,793 85	13,934 43	3,781 62	17,716 05
Tillsonburg.....	36,573 97	34,971 45	10,247 52	2,137 07	12,384 59
Hespeler.....	29,134 71	30,019 91	9,018 45	2,140 19	11,158 64
Seaforth.....	23,537 49	24,090 67	10,190 52	1,653 65	11,845 17
Weston.....	29,135 16	18,626 50	7,531 92	1,588 48	9,120 40
Milton.....	24,177 73	23,145 10	5,112 43	1,582 93	6,695 36
Mitchell.....	27,103 21	11,684 02	8,320 90	2,224 07	10,544 97
Georgetown.....	18,014 48	20,000 00	972 91	484 33	1,457 24
Acton.....	10,935 05	10,748 00	3,022 37	1,124 06	4,146 43
New Hamburg.....	23,727 21	17,751 94	6,724 08	1,170 92	7,895 00
Mimico.....	15,607 08	14,685 80	2,174 95	845 02	3,019 97
Port Dalhousie.....	11,043 46	11,957 44	3,970 83	814 89	4,785 72
Norwich.....	14,285 41	14,467 36	4,272 92	886 40	5,159 32
Hagersville.....	6,558 31	6,000 00	1,004 92	97 60	1,102 52
Baden.....	5,540 63	4,843 68	3,103 33	325 26	3,428 59
Stayner.....	10,018 67	8,755 34	202 00	340 82	542 82
Caledonia.....	4,871 81	4,410,95	783 78	328 09	1,111 88
Coldwater.....	7,710 77	7,000 00	644 86	455 36	1,100 22
Port Stanley.....	19,642 58	18,153 58	4,522 20	1,188 91	5,711 11
Elmvale.....	7,423 01	6,894 64	589 31	299 76	889 07
Waterdown.....	7,373 96	6,303 41	1,420 16	521 56	1,941 72
Rockwood.....	5,526 51	5,034 13	281 96	225 99	507 95
Beachville.....	8,361 27	5,360 00	4,729 51	518 86	5,248 37
Port Credit.....	9,533 02	7,268 56	1,525 95	534 23	2,060 18

Figures in italics denote credits. a Approximate Report. Accounts not yet audited.
f Gross profit not sufficient to provide for full 5% depreciation due to small power load and poor diversity factor. g 13 months operation and revenue due to change in fiscal year.
h Depreciation at 2½% account special construction.

MENT "B"

for Period ending December 31st, 1913

Revenue.	Gross Surplus	Depreciation	Net Surplus	Number of Customers			
				House	Comm'l	Power	Total
$ c.	$ c.	$ c.	$ c.				
1,151,128 89	241,095 03	(h)91,819 92	149,275 11	16,519	4,764	1,037	22,320
191,648 64	49,365 10	24,000 00	25,365 10	5,766	829	141	6,736
110,496 42	18,565 84	(k) 8,597 09	9,968 75	5,117	924	209	6,250
192,224 47	37,069 14	21,716 32	15,352 82	5,201	1,007	198	6,406
94,555 19	25,365 04	10,980 79	14,384 25	1,291	470	127	1,888
171,514 02	64,821 94	(b)	64,821 94	3,409	500	55	3,964
75,124 04	26,160 03	6,900 00	19,260 03	951	329	70	1,350
80,726 82	23,158 97	8,000 00	15,158 97	1,260	400	85	1,745
55,983 70	13,638 35	3,420 00	10,218 35	1,084	367	92	1,543
45,233 73	11,949 08	8,400 00	3,549 08	1,122	353	65	1,540
46,859 86	11,407 17	5,827 40	5,579 77	636	282	55	973
21,181 64	3,411 70	2,390 00	1,021 70	477	220	18	715
27,245 02	4,113 99	3,350 00	763 99	763	200	13	976
7,630 34	258 62	(c)	258 62	408	53	18	479
30,176 00	8,525 59	2,862 00	5,663 59	278	170	44	492
21,362 56	7,938 94	2,950 00	4,988 94	491	172	25	688
29,626 32	8,120 34	3,100 00	5,020 34	321	125	44	490
11,300 43	3,329 17	1,508 00	1,821 17	377	134	27	538
34,688 57	9,099 71	2,924 00	6,175 71	526	151	28	705
17,318 91	5,963 06	1,820 00	4,143 06	128	91	15	234
20,173 22	1,373 82	3,200 00	(d)*1,826 18*	396	160	29	585
23,661 98	5,945 93	2,500 00	3,445 93	643	138	16	797
16,001 19	3,616 60	1,782 75	1,833 85	254	143	17	414
10,418 05	(e) *740 59*	1,450 00	(d)*2,190 59*	174	76	11	261
14,388 08	2,542 91	1,300 00	1,242 91	178	105	10	293
13,836 79	4,716 39	1,390 00	3,326 39	360	34	6	400
9,867 10	3,171 74	900 00	2,271 74	110	74	5	189
13,459 54	2,914 57	1,150 00	1,764 57	179	85	16	280
2,280 35	823 11	300 00	523 11	160	120	5	285
4,409 45	263 04	500 00	(d) *236 96*	82	62	3	147
11,424 57	3,529 57	900 00	2,629 57	142	63	8	213
3,803 55	783 58	740 00	43 58	250	.....	5	255
5,336 49	550 77	450 00	100 77	238	.....	3	241
6,400 52	1,241 20	500 00	741 20	166	76	3	245
1,128 77	26 25	(c)	26 25	3	24	3	30
3,957 83	529 24	277 00	252 24	75	.....	2	77
612 25	69 43	(c)	69 43	120	30	2	152
1,458 94	347 06	250 00	97 06	17	16	1	34
1,514 87	414 65	350 00	64 65	48	32	2	82
8,217 86	2,506 75	617 75	1,889 00	182	60	9	251
933 65	44 58	(c)	44 58	52	52	1	105
2,516 94	575 22	365 00	210 22	70	34	2	106
907 09	399 14	(c)	399 14	48	9	1	58
6,762 21	1,513 84	525 00	988 84	45	.....	4	49
3,507 81	1,447 63	446 00	1,001 63	93	21	2	116

b No depreciation included, account 15 year debentures and large investment in hydraulic development. c No depreciation. Operating less than a year.

d Not sufficient profit to provide for depreciation. Operating costs high, due to abnormal line and transformation losses. A remedy is now being worked out. The net showing is $2,455.01 better than in 1912.

e Heavy operating costs due to maintenance of steam plant, which has now been eliminated.

k Depreciation at 3% account special construction.

STATE

Comparative Detailed Operating Reports of

For the year ending

——	Toronto *w*	Ottawa	Hamilton *w*	London	Berlin *a*
Revenues	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Lighting	185,797 67	68,032 27	34,131 61	41,194 92	16,558 82
Commercial Lighting	231,255 71	53,438 04	25,453 99	38,156 85	20,985 35
Power	345,620 60	26,978 76	47,415 58	79,637 50	38,368 34
Street Lighting	344,933 79	43,199 57	2,250 89	28,372 20	17,373 81
Miscellaneous	43,521 11	.....	1,244 35	4,863 00	1,268 87
Total Revenue	1,151,128 89	191,648 64	110,496 42	192,224 47	94,555 19
Operating Expenses					
Power Purchased	255,986 26	50,750 00	47,307 65	72,676 41	33,359 47
Sub-Station Operation	32,216 66	3,127 63	2,842 26	*m* 6,335 99	4,892 72
Sub-Station Maintenance	11,510 69	107 58	492 72	.....	1,175 64
Distributi'n, Oper. & M't'ce	50,693 34	13,694 44	3,168 21	3,952 62	1,575 15
Transformer Maintenance	3,396 98	245 82	1,216 21	2,080 59	205 39
Meter Maintenance	1,648 28	1,537 17	16 39	1,122 57	326 51
Consumers' Premises Exp.	36,536 64	10,572 43	2,607 62	1,827 71	101 97
Street Light Oper. & M't'c'e	45,801 72	15,465 59	1,289 38	5,278 72	2,803 88
Promotion of Business	58,908 53	1,008 50	4,391 01	5,833 84	452 28
Billing and Collecting	35,081 71	6,417 69	6,270 38	6,738 13	1,901 40
General Office Salaries	65,458 23	6,941 68	2,532 11	7,338 12	2,093 53
General Office Expenses	24,415 16	*o*	1,046 35	6,842 08	438 72
Maint'nan'e Utility Equip't	22,753 71	.....	722 85	4,154 38	1,262 56
Undistributed Expenses	25,674 87	1,453 47	611 26	2,142 70	703 48
Interest	179,198 09	.....	8,409 13	19,351 72	10,686 20
Debenture or Sinking Fund	60,752 99	*q*30,961 54	9,007 05	9,479 75	7,211 25
Depreciation Allowance	91,819 92	24,000 00	8,597 09	21,716 32	10,980 79
Total Expenses	1,001,853 78	166,283 54	100,527 67	176,871 65	80,170 94
Net Surplus	149,275 11	25,365 10	9,968 75	15,352 82	14,384 25
Net Loss	.....	.....	.....	.....	.....
	1,151,128 89	191,648 64	110,496 42	192,224 47	94,555 19

MENT "C"

Electric Departments of Hydro Municipalities

December 31st, 1913

Pt. Arthur *w*	St. Thomas	Guelph	Stratford	Galt	Woodstock	Collingwood	Barrie *b*	Welland *c*
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
105,056 50	11,125 50	11,528 09	11,636 59	10,535 38	6,495 02	16,375 83	19,024 18	1,369 67
l	16,097 41	15,075 61	17,033 98	11,648 49	12,942 32	*l*	*l*	558 46
51,748 11	36,550 26	42,091 34	15,123 78	16,575 61	20,262 52	896 72	3,390 29	4,307 21
14,709 41	10,989 72	9,500 04	12,120 00	6,280 25	7,160 00	3,802 88	4,292 53	1,395 00
.....	361 15	2,531 74	69 33	194 00	.....	106 21	478 02	.....
171,514 02	75,124 04	80,726 82	55,983 68	45,233 73	46,859 86	21,181 64	27,185 02	7,630 34
43,664 83	31,435 85	32,473 66	22,028 75	17,883 91	18,798 66	7,480 48	6,611 27	4,861 38
5,587 34	2,452 25	1,700 14	1,651 06	1,761 14	1,834 83	1,952 60	*n*5,706 97	295 43
192 13	913 99	1,076 44	200 54	180 76	497 39	.....	.....	.....
10,598 22	1,580 22	3,004 51	1,630 72	446 24	1,827 65	1,374 21	679 16	191 18
.....	47 57	179 90	148 48	11 48	4 84	9 19	.....	32 82
113 88	53 40	585 91	261 33	2 00	70 75	13 37	17 92	50
322 64	.....	206 39	*r* 501 90	.....	345 00	.....	.....	.....
1,543 03	2,405 21	1,566 58	1,509 91	296 88	1,142 30	133 20	402 06	123 82
361 85	.....	.....	.....	.....	.....	.....	.....	.....
2,630 19	339 43	430 35	1,325 47	1,188 20	1,115 75	252 08	.....	317 42
1,330 44	*o*	1,297 25	1,419 51	*o*	*o*	*o*	*o*	*o*
983 17	1,593 77	2,127 52	919 76	1,638 80	2,513 73	2,066 94	3,578 67	798 53
.....	.....	*p* 884 95	.....	153 60	.....	.....	.....	.....
954 99	739 67	1,760 98	.....	.....	447 96	209 90	544 58	39 45
.....	.....	.....	211 15	5,729 29	4,202 40	.....	.....	711 19
*q*38,409 37	*q*7,402 65	*q*1,027 27	10,536 75	3,992 35	2,651 43	*q*4,277 77	*q*5,590 40	*s*
r	6,900 00	8,000 00	3,420 00	8,400 00	5,827 40	2,390 00	3,350 00	.....
106,692 08	55,864 01	65,567 85	45,765 33	41,684 65	41,280 09	20,159 94	26,481 03	7,371 72
64,821 94	19,260 03	15,158 97	10,218 35	3,549 08	5,579 77	1,021 70	703 99	258 62
.....	.....	.....	.....	.....	.....	.....	.....	.....
171,514 02	75,124 04	80,726 82	55,983 68	45,233 73	46,859 86	21,181 64	27,185 02	7,630 34

STATEMENT

Comparative Detailed Operating Reports of

For the year ending

——	Ingersoll	Midland	*a*Waterloo	Dundas	Preston	Penetang
Revenues	$ c.	c.	$ c.	$ c.	$ c.	$ c.
Domestic Lighting	3,595 03	6,095 11	4,263 66	3,045 85	5,477 10	1,989 80
Commercial Lighting	6,048 51	6,104 16	5,098 42	4,193 27	5,366 77	4,511 16
Power	15,293 44	5,700 22	14,970 14	3,070 40	21,017 68	8,775 95
Street Lighting	4,262 03	3,463 07	5,284 10	60 10	2,594 55	2,042 00
Miscellaneous	976 99	.....	.....	930 81	232 47	.....
Total Revenue	30,176 00	21,362 56	29,626 32	11,300 43	34,688 57	17,318 91
Operating Expenses						
Power Purchased	11,966 61	6,059 33	11,075 53	3,474 08	16,673 20	6,347 56
Sub-Station Operation	828 83	.....	1,019 10	.....	1,459 16	967 84
Sub-Station Maintenance	.....	.....	81 00	.....	49 21	.....
Distribuli'n, Oper. & M't'ce	422 13	989 11	378 74	154 77	1,238 36	301 41
Transformer Maintenance	187 39	57 20	32 13	35 80	280 22	236 11
Meter Maintenance	97 00	.....	54 67	4 40	79 67	.....
Consumers' Premises Exp.	.....	.....	.....	.....	.....	.....
Street Light Oper. & M't'c'e	440 09	526 53	1,093 25	.....	431 92	144 56
Promotion of Business	.....	.....	.....	.....	.....	.....
Billing and Collecting	560 15	221 04	866 90	689 51	656 75	44 45
General Office Salaries	*o*	.....	.....	.....	.....	.....
General Office Expenses	1,615 40	1,435 86	2,519 50	1,642 56	415 98	1,278 02
Maint'nan'e Utility Equip't	.....	.....	.....	.....	.....	.....
Undistributed Expenses	195 56	.....	709 19	.....	183 85	.....
Interest	.....	2,019 21	.....	.....	2,139 62	1,431 63
Debenture or Sinking Fund	*p* 5,337 25	2,115 34	*q* 3,675 97	*q* 1,970 14	1,980 92	604 27
Depreciation Allowance	2,862 00	2,950 00	3,100 00	1,508 00	2,924 00	1,820 00
Total Expenses	24,512 41	16,373 62	24,605 98	9,479 26	28,512 86	13,175 85
Net Surplus	5,663 59	4,988 94	5,020 34	1,821 17	6,175 71	4,143 06
Net Loss	.....	.....	.....	.....	.....	.....
	30,176 00	21,362 56	29,626 32	11,300 43	34,688 57	17,318 91

"C"—Continued

Electric Departments of Hydro Municipalities

December 31st, 1913

St. Mary's	Brampton	Tillsonburg	Hespeler	Seaforth	Weston	Milton	Mitchell	[d]Georgetown
$ c.	$ c.	$ c.	$ c.	$ c.	$ c	$ c.	$ c.	$ c.
3,815 77	5,617 61	2 796 57	3,873 75	2,124 18	4,117 20	1,149 28	2,424 59	661 49
4,553 73	3,986 65	4,677 38	[l]	2,876 47	1,475 74	1,212 26	2,813 92	842 87
8,221 72	10,557 72	4,763 13	5,044 30	7,509 99	6,166 97	6,462 38	6,160 53	234 32
3,582 00	3,500 00	2,601 00	1,500 00	1,815 81	2,052 00	900 00	1,675 00	541 67
.....	.....	1,163 11	.....	61 63	24 88	143 18	385 50	.....
20,173 22	23,661 98	16,001 19	10,418 05	14,388 08	13,836 79	9,867 10	13,459 54	2,280 35
10,055 82	11,084 34	6,249 35	5,208 18	7,931 55	5,159 49	4,902 34	6,858 86	759 00
728 39	.....	950 05	2,101 87	.....	.....	.....	.....	.....
150 46	26 11	.....	.....	.....	.....	.....	12 35	.....
556 05	231 54	332 50	638 83	1,573 93	741 47	167 82	81 25	12 85
519 39	16 00	4 89	.....	.....	50 30	.....	.....	.....
202 56	.....	.....	4.17	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
554 36	168 79	205 87	57 50	317 37	574 25	.....	44 64	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
263 21	341 70	907 04	87 73	.....	327 00	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
1,077 38	1,694 67	1,064 21	647 50	368 67	599 91	42 27	1,223 80	201 06
.....	.....	.....	.....	.....	.....	.....	.....	.....
75 63	371 28	533 61	272 67	.....	79 50	.....	100 00	.....
.....	2,526 10	.....	.....	.....	.....	.....	.....	.....
[q]4,616 15	1,255 32	[q]2,137 07	[q]2,140 19	[q]1,653 65	[q]1,588 48	[q]1,582 93	[q]2,224 07	[q] 484 33
3,200 00	2,560 00	1,782 75	1,450 00	1,300 00	1,390 00	900 00	1,150 00	300 00
21,999 40	20,216 05	14,167 34	12,608 64	13,145 17	10,510 40	7,595 36	11,694 97	1,757 24
.....	3,445 93	1,833 85	.....	1,242 91	3,326 39	2,271 74	1,764 57	523 11
1,826 18	.....	.....	2,190 59	.....	.....	.....	.....	.....
20,173 22	23,661 98	16,001 19	10,418 05	14,388 08	13,836 79	9,867 10	13,459 54	2,280 34

STATEMENT

Comparative Detailed Operating Reports of

For the year ending

—	Acton	New Hamburg	Mimico	[e] Pt. Dalhousie	Norwich	[f] Hagersville
Revenues	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Lighting	1,236 50	1,589 21	2,021 06	3,742 54	1,926 78	81 92
Commercial Lighting	1,567 48	1,890 72	*l*	*l*	1,162 98	*l*
Power	318 77	5,792 20	795 49	347 28	1,978 55	746 85
Street Lighting	1,000 00	1,827 00	987 00	1,246 67	1,285 50	300 00
Miscellaneous	286 72	325 44			46 71	
Total Revenue	4,409 47	11,424 57	3,803 55	5,336 49	6,400 52	1,128 27
Operating Expenses						
Power Purchased	1,801 50	5,206 00	1,740 66	3,293 00	3,176 24	967 23
Sub-Station Operation						
Sub-Station Maintenance						
Distributi'n, Oper. & M't'ce	379 17	323 40	144 79	253 81	178 90	
Transformer Maintenance						
Meter Maintenance						
Consumers' Premises Exp.						
Street Light Oper. & M't'c'e			23 89	8 74	79 51	
Promotion of Business						
Billing and Collecting		610 75				
General Office Salaries						
General Office Expenses	841 70	583 73	265 61	302 30	838 27	37 69
Maint'nan'e Utility Equip't						
Undistributed Expenses				112 98		
Interest				[u] 814 89		
Debenture or Sinking Fund	[q] 1,124 06	[q] 1,170 92	[q] 845 02		[q] 886 40	[t] 97 60
Depreciation Allowance	500 00	900 00	740 00	450 00	500 00	
Total Expenses	4,646 43	8,795 00	3,759 97	5,235 72	5,659 32	1,102 52
Net Surplus		2,629 57	43 58	100 77	741 20	26 25
Net Loss	236 96					
	4,409 47	11,424 57	3,803 55	5,336 49	6,400 52	1,128 27

[a] 13 months' operation.
[b] 3 months under steam.
[c] 4 months' operation.
[d] 4 " "
[e] 17 months' operation.
[f] 3 " "
2 " "
[h] 11 " "
[i] 6 months' operation.
[j] 4 " "
[k] 2 years' "

[l] Domestic and Commercial Revenue combined under heading of Domestic Lighting.
[m] Sub Station Maintenance included.
[n] Includes maintenance and operation of steam plant for 3 months.
[o] General Officers' salaries included in General Expense.
[p] Motor repairs at Guelph.

"C"—Concluded

Electric Departments of Hydro Municipalities

December 31st, 1913

Baden	*g* Stayner	*h* Caledonia	Coldwater	Pt. Stanley	*i* Elmvale	Waterdown	*j* Rockwood	*k* Beachville	Pt. Credit
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
884 11	158 48	404 60	735 68	1,828 66	631 65	1,164 29	230 27	562 97	1,963 22
l	116 91	*l*	*l*	1,771 70	*l*	*l*	*l*	*l*	*l*
2,242 77	301 86	470 34	247 19	2,418 00	.....	917 63	480 82	5,993 81	848 59
830 95	35 00	584 00	532 00	2,199 50	302 00	435 00	196 00	206 03	696 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3,957 83	612 25	1,458 94	1,514 87	8,217 86	933 65	2,516 94	907 09	6,762 21	3,507 81
2,807 04	187 52	712 46	535 86	3,506 43	506 33	988 00	237 50	4,221 68	1,210 65
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28 84	.....	23 05	76 08	354 49	7 86	183 71	.....	130 71	22 21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	32 92	.....	.....	35 31	.....	.....	121 27
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	292 81	.....	.....	44 46	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
267 45	14 48	48 28	.....	368 47	75 12	213 14	.....	249 50	171 82
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	127 62	.....
.....	.....	.....	.....	.....	.....	.....	75 99	.....	.....
*q*325 26	*q*340 82	*q*328 09	*q*455 36	*q*1,188 91	*t* 299 76	*q*521 56	*t* 150 00	*q* 518 86	*q*534 23
277 00	.....	250 00	375 00	617 75	.....	365 00	.....	525 00	446 00
3,705 59	542 82	1,361 88	1,475 22	6,328 86	889 07	2,306 72	507 95	5,773 37	2,506 18
252 24	69 43	97 06	39 65	1,889 00	44 58	210 22	399 14	988 84	1,001 63
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3,957 83	612 25	1,458 94	1,514 87	8,217 86	933 65	2,516 94	907 09	6,762 21	3,507 81

q Includes Debenture interest and principal.

r No depreciation included—15 year debentures and large investment in hydraulic development.

s Debentures not sold—no allowance.

t Proportion of fixed charges only.

u Debentures not sold—interest on advance and loan.

v Bad debts written off.

w Books have not been closed. Figures subject to change on final audit.

STATEMENT "D"

Report showing comparative revenue and number of consumers in municipalities where Hydro Power has been in use for two years or more.

—	—	Revenues.				Consumers		
		Domestic Lt.	Commercial Lt.	Power	Street Lt.	Domestic	Commercial	Power
		$ c.	$ c.	$ c.	$ c.			
Toronto	1912	201,554 74	*	225,451 55	275,666 23	11,441	*	518
	1913	185,797 67	231,255 72	369,128 37	344,933 79	16,519	4,764	1,037
Ottawa	1912	62,598 18	51,365 91	25,299 94	40,970 21	5,390	440	90
	1913	68,032 27	53,438 04	26,978 76	43,199 56	5,766	818	152
London	1912	28,196 62	28,527 44	52,633 00	29,270 00	3,851	792	158
	1913	41,932 42	39,256 07	79,758 96	28,372 00	5,201	1,007	198
Berlin	1912	14,585 02	19,080 82	28,654 23	12,387 63	1,022	422	105
	1913	15,291 37	19,548 91	35,655 90	16,155 75	1,291	470	127
St. Thomas	1912	7,596 01	18,741 74	14,761 30	12,208 30	620	300	60
	1913	11,125 50	16,097 41	36,550 26	10,989 72	951	329	70
Guelph	1912	10,251 87	16,400 57	30,139 00	11,000 00	960	345	73
	1913	11,528 07	15,075 61	42,091 34	9,500 04	1,260	400	85
Stratford	1912	6,942 56	14,661 16	8,834 40	12,120 00	640	316	76
	1913	11,550 71	17,072 61	14,272 59	12,120 00	1,042	367	92
Galt	1912	8,183 69	9,732 86	10,042 59	5,000 70	830	250	47
	1913	10,535 38	11,648 49	16,575 61	6,280 25	1,122	353	65
Woodstock	1912	4,914 92	13,316 02	21,087 61	5,400 00	464	265	43
	1913	6,495 02	12,942 32	20,262 52	7,160 00	636	282	55
Ingersoll	1912	3,073 73	6,648 28	14,430 66	3,000 00	220	142	38
	1913	3,595 03	6,048 51	15,293 44	4,262 03	278	170	44
Midland	1912	11,756 10	*	3,188 03	3,777 65	420	165	18
	1913	12,199 27	*	3,700 22	3,463 07	491	172	25
Waterloo	1912	4,057 46	4,524 93	11,545 93	4,538 82	239	112	35
	1913	4,263 66	5,098 42	14,970 14	4,905 77	321	125	44
Preston	1912	4,234 68	5,237 99	15,478 14	2,585 00	341	131	21
	1913	5,477 10	5,366 77	21,017 68	2,594 55	526	151	28
Penetang	1912	1,676 26	3,836 30	2,207 51	1,962 00	101	87	13
	1913	1,989 80	4,511 16	8,775 95	2,042 00	128	91	15
St. Mary's	1912	9,036 36	*	6,001 30	3,449 50	240	143	20
	1913	8,369 50	*	8,221 72	3,582 00	396	160	29
Brampton	1912	3,004 66	2,893 74	3,531 34	3,500 00	409	104	12
	1913	5,617 61	3,986 65	10,557 72	3,500 00	643	138	16
Tillsonburg	1912	3,233 92	3,350 91	3,283 75	3,073 50	200	128	6
	1913	2,796 57	4,677 38	4,763 15	2,601 00	254	143	17
Weston	1912	4,729 81	*	1,674 28	1,788 00	225	15	4
	1913	5,272 04	*	5,178 54	2,052 00	360	34	6
Mitchell	1912	2,964 48	2,977 08	4,597 03	1,375 00	159	79	13
	1913	2,362 52	2,813 92	6,160 53	1,675 00	179	85	16
New Hamburg	1912	1,195 08	1,423 35	3,369 05	1,627 00	124	63	5
	1913	1,589 21	1,890 72	5,792 20	1,827 00	142	63	8
Norwich	1912	862 17	674 48	263 93	591 00	128	64	2
	1913	1,926 78	1,162 98	1,978 55	1,285 50	166	76	3
Pt. Stanley	1912	897 02	1,106 63	1,314 70	1,545 10	122	40	3
	1913	1,828 06	1,771 70	2,418 00	2,199 50	182	60	9
Waterdown	1912	1,014 40	*	614 42	375 83	41	20	2
	1913	1,164 29	*	917 65	435 00	70	34	2

* Denotes that Domestic and Commercial lighting figures have not been separated, the figures shown being the total of the two.

STATEMENT "E"

Street light installation in cities, towns and incorporated villages, total cost per yearr, cost per lamp and cost per capita during the year 1913:—

—	Estimated populaion	Street Lt. Revenue	Installation		Cost per Arc per year	Cost per Incandescent per year	Cost per capita per year
			No. of Arcs	No. of Incandescents			
		$ c.			$ c.	$ c.	c.
Toronto	435,000	344,933 79	.....	38200–	.....	100w. 9 00	.80
Ottawa	95,600	43,199 57	690	2460orna. 186–100w.	45 00	100w. 6 83 100w. 10 00	.45
London	52,000	28,372 20	.....	2868	.....	75w. 11 00 100w. 12 85	.54
St. Thomas	17,000	10,989 72	44	1200	55 00	9 00	.64
Port Arthur	15,600	14,709 41	.....	2147	.....	60w. 5 00 100w. 8 30	.94
Berlin	17,500	16,057 40	.....	1756–100w.	.....	100w. 9 11	.91
Guelph	16,319	9,500 04	.....	1000–100w.	.....	100w. 9 50	.59
tratford	16,000	12,120 00	.....	600–100w.	.....	20 00	.76
Galt	11,800	6,280 25	.....	901–100w.	.....	100w. 9 50	.54
Woodstock	10,154	7,160 00	.....	38–250w. 655–100w.	.....	250w. 25 00 100w. 10 00	.70
Collingwood	7,600	3,802 84	.....	385	.....	12 00	.50
Ingersoll	5,149	4,262 03	.....	323	.....	80w. 12 50 60w. 12 00	.82
Midland	6,200	3,463 07	16	220	50 00	100w. 13 50	.52
Waterloo	7,000	4,877 64	.....	546	.....	100w. 10 00 60w. 9 00	.70
Preston	4,982	2,594 55	.....	234	.....	100w. 12 00 50w. 11 00	.52
Penetang	3,701	2,042 00	.....	161	.....	100w. 12 00	.55
St. Mary's	4,000	3,582 00	47	48	65 00	75w. 13 00	.90
Brampton	5,000	3,500 00	.....	500	.....	7 00	.70
Tillsonburg	2,976	2,601 00	.....	223	.....	60w. 11 00	.87
Hespeler	3,089	1,500 00	.....	120	.....	100w. 12 50	.50
Seaforth	1,900	1,815 81	.....	116	.....	75w. 15 00 60w. 12 00	.95
Weston	2,300	2,052 00	.....	171	.....	100w. 12 00	.90
Milton	2,000	1,200 00	.....	150	.....	100w. 8 00	.60
Mitchell	2,000	1,675 00	.....	87	.....	100w. 13 80	.84
Acton	1,750	1,000 00	.....	147	.....	100w. 12 00	.58
New Homburg	1,624	1,827 00	.....	200	.....	100w. 9 00	1.13

MUNICIPAL RATES

The development of the present systems of charge for power and lighting service in the Municipalities is outlined in the report of 1912. This report also contains the Power Commission Act of 1912, which gives to the Commission the approval and control of all rates used by any Municipal Electrical Department for the supply of electrical power or lighting service.

Up to this time, some of the Municipalities had been using the first standard schedule as developed by the representatives of the Municipalities. Others were using rate schedules patterned after the Toronto system of charge. Then, again, others were using schedules of their own invention, or following previous practice. Among this last group there existed a great variety, consisting of flat rates, meter rates, and all combinations of these. Some of the rates used were more or less equitable, while others were not, being based on previous practice, local prejudice, or forced upon the Municipality by competition.

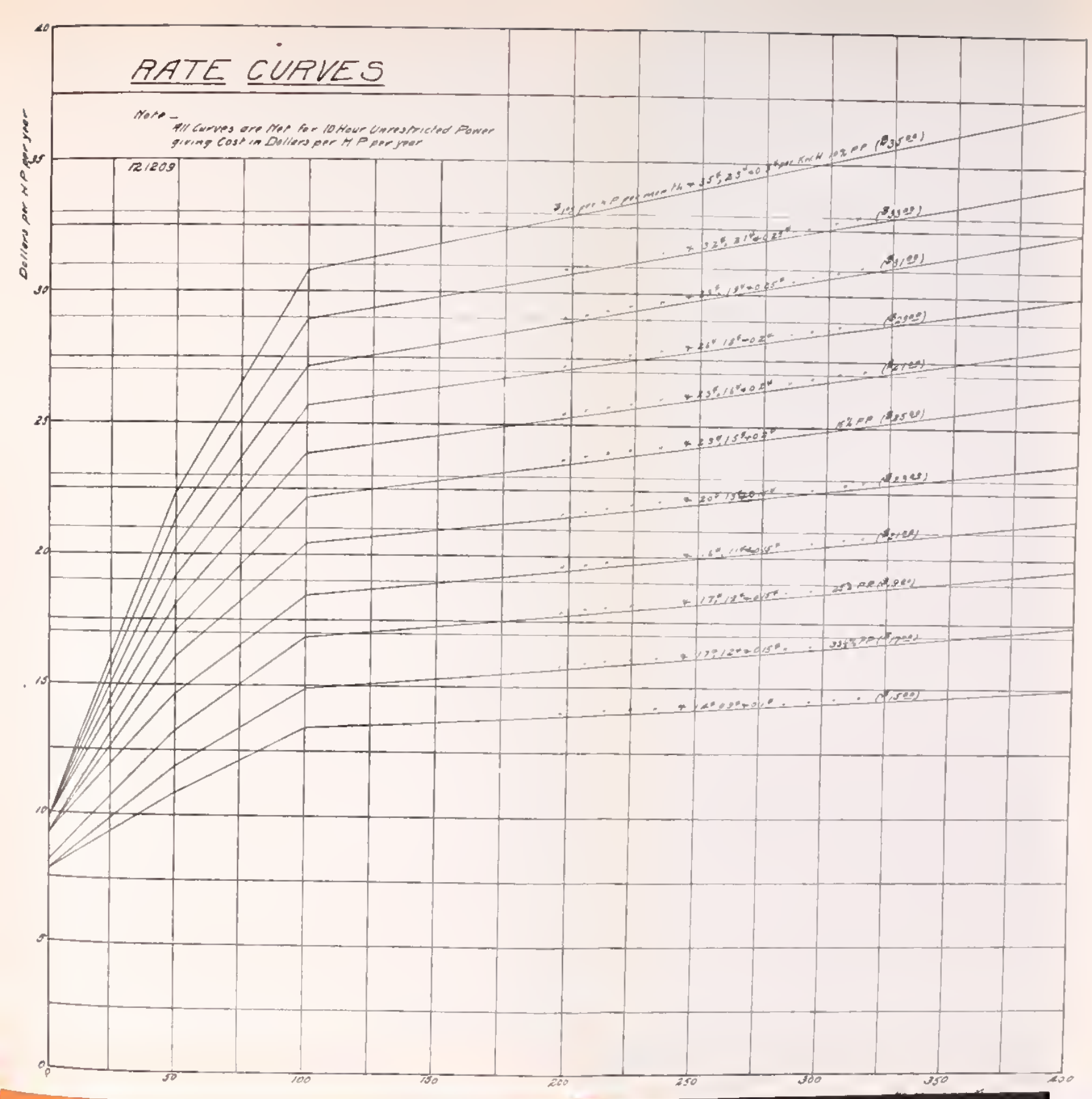
It was quite evident that unless a standard form of charge was used in all the Municipalities, there would be endless confusion and dissatisfaction.

In order that this standardization of rates could be worked out intelligently, a thorough study was made of the auditor's reports on the financial workings of the different Municipal Electrical Departments. From these reports, data was compiled showing the total capital invested in each of the following four Departments, viz.: Domestic Lighting, Commercial Lighting, Power and Street Lighting. It was also necessary to distribute between these four different Departments the different items of cost of operation, such as power, attendance, renewals and repairs, and the many other small items shown in the Standard System of Accounting. With all of this data it was possible to determine the approximate ratio between "service" or "demand" cost due to the fact that a service had been installed and a demand created, and the variable "consumption cost depending upon the use or non-use of power."

From this study resulted a standardized "service charge," and a variable "consumption charge," dependent upon the cost of power to the Municipality.

At the beginning of the year 1913, each Municipality taking power through the Commission was advised of the schedule of rates which were recommended for their use. In the majority of cases, these rates were adopted as recommended, since most of the Municipalities had co-operated in this study of rates, and had taken the various steps to reach the standard as recommended.

In some Municipalities, however, the recommended system of charge differed so greatly from that then in use, that a special investigation was necessary to demonstrate the advisability of making the change. In a number of cases, this called for a tabulation of the consumption of all of the users of one or more classes of power or lighting within the Municipality, to compare the results with the cost of service and with the results as they would have been had the recommended rates been in service. These investigations in one or two Municipalities have been difficult and the determination of the rate is still pending, but at the end of this fiscal year we can see our way clear to the adoption by all of the Municipalities securing power from the Commission of a standard system of charge which it is believed is just to all users, and fair to the Municipality, tending to the economy of use, and also encouraging a broader use of electricity.


RATE CURVES
Note –
All Curves are Net for 10 Hour Unrestricted Power
giving Cost in Dollars per H P per year
12/1209
Dollars per H P per year
0
5
10
15
20
25
30
35
40
50
100
150
200
250
300
350
400

No.....

NAME ..... Dated.....191....

APPLICATION FOR ELECTRIC POWER SERVICE

THE UNDERSIGNED, hereinafter called the Consumer, hereby requests the .....
....., hereinafter called the Corporation, to make the necessary service connections and furnish electrical energy at the premises.....
....., owned by .....
and occupied by .....as a ..... The electrical energy is required to operate .....
of.....total horse-power capacity. Maximum demand kilowatts.....

The Consumer and the Corporation agree to abide by the "Conditions" on the reverse hereof and to hold this Application as a contract when signed by the Consumer and accepted by the.....
.....

The Consumer further agrees to (1) to take from the Corporation all the electrical energy required by Consumer for power purposes for a term of one year from the date hereon and to pay monthly for such energy and service in accordance with the rates on the reverse hereof under Class..... (2) to commence payments within one month from the date of connection.

SIGNED ..... ACCEPTED FOR THE CORPORATION BY .....
Consumer. DATE.....191....

Connected Load.....Horse-power. Date Connected.....191....

Maximum Demand.....Kilowatts. " Meter Installed.....191....No.....

RATES AND DISCOUNTS

SERVICE CHARGE—$1.00 per month per h.p. of Connected Load or Maximum demand.

CONSUMPTION CHARGE—Up to the first 50 hours' monthly use of Load .....c. per kw-hr.
Additional consumption up to the second 50 hours' use .....c. per kw-hr.
Remaining consumption - - - - - .....c. per kw-hr.

DISCOUNTS—Class "A," 24 hour unrestricted use; No class discount.
" "B," 24 " restricted " 10% off above rate.
" "C," 10 " unrestricted " 10% " " "
" "D," 10 " restricted " 33⅓% " " "
Less.....% on whole Bill if paid within 10 days from date of Bill.

RESTRICTED HOURS.

Oct. 15th—Oct. 31st..	5.30 p.m.	6.30 p.m.
Nov. 1st—Nov. 30th..	5.00 "	6.30 "
Dec. 1st—Jan. 15th..	4.30 "	6.30 "
Jan. 16th—Feb. 15th..	5.00 "	6.30 "
Feb. 16th—Mar. 1st..	5.30 "	6.30 "

CONDITIONS

1. The Consumer agrees to provide convenient and safe space for the Corporation's meters (for which no rental charges will be made), wires and all other appliances in said premises, and further agrees that no one who is not an agent of the Corporation or otherwise lawfully entitled to do so, shall be permitted to remove, inspect or tamper with the same, and that the properly authorized agents of the Corporation shall, at all reasonable hours, have free access to the said premises for the purpose of reading, examining, repairing or removing their said meters, wires and other material and appliances.

2. Meters and all other appliances of the Corporation in said premises shall be in the care and in the risk of the Consumer, and if destroyed or damaged by fire, or any cause whatsoever, other than ordinary wear and tear, the Consumer shall pay to the Corporation the value of such meters and appliances, or the cost of repairing or replacing the same.

3. The Consumer hereby expressly authorizes and empowers the Corporation at its option to remove the meters and all other material and appliances installed at its expense and cut off the supply of electricity and terminate this agreement whenever any bills for said service are in arrears or upon violation by the Consumer of any of the terms and conditions of this agreement.

4. The Corporation agrees to use reasonable diligence in providing a regular and uninterrupted supply of electricity, but does not guarantee a constant supply of electricity, and will not be liable in damages to the Consumer for failure to supply electricity to said premises.

5. This agreement shall not be binding upon the Corporation until accepted by it through its proper officer, and shall not be modified or affected by any promise, agreement or representation by any agent or employee of the Corporation unless incorporated in writing into this agreement before such acceptance.

6. The Consumer agrees that on request of Corporation, he will deposit with the Corporation the sum of .....dollars to be held by Corporation as a guarantee that Consumer will fulfil all the terms of this agreement.

7. The Conshumer will provide all lines on the premises and all lines connecting premises with the point of delivery, and maintain the same in efficient condition with proper devices, the whole according to the requirements of the Rules and Regulations of the Hydro-Electric Power Commission of Ontario.

8. This agreement shall continue in force after the term herein mentioned from year to year until terminated by a notice in writing, given by either party hereto at least one month before the end of the term or any yearly term thereafter.

9. It is agreed that the signatures of the parties hereto shall be binding upon their successors or assigns, and that the vacating of the premises herein named shall not release the consumer from this agreement, except at the option and by written consent of the Corporation.

10. If required to fix the basis of billing, the Consumer hereby authorizes the Corporation to instal and repair maximum demand or curve-drawing meters or other measuring devices at Consumer's expense, or to make tests from time to time to determine the maximum amount of power used. The Consumer agrees not to make any changes in or additions to his apparatus or connected load after the same has been so determined, except with the written consent of the Corporation.

11. All electrical and mechanical equipment used by the Consumer shall be subject to the reasonable approval of the Corporation, and the Consumer shall so take and use the electrical energy as not to endanger the apparatus of the Corporation or cause any wide or abnormal fluctuation of its line voltage. All motors shall be selected with reference to securing the highest feasible power factor at all loads. Minimum power factor when operating Consumer's maximum load shall be 80 per cent. for motors up to 10 H. P. and 85 per cent above 10 H. P.

NAME .....Residence Class 1 No.....

Commercial " 2 Dated.....191....

APPLICATION FOR ELECTRIC LIGHTING SERVICE.

THE UNDERSIGNED, hereinafter called the Consumer, hereby requests the ...., hereinafter called the Corporation, to make the necessary service connections and furnish electrical energy at the premises .....within the ..... of ....., owned by .....and occupied by ..... as a ..... The electrical energy is required to operate ..... Total connected kilowatts ..... Maximum demand kilowatts. .....

The Consumer and the Corporation agree to abide by the " Conditions " on reverse hereof and to hold this Application as a contract when signed by the Consumer and accepted by the ....

The Consumer further agrees to (1) take from the Corporation all the electrical energy required by Consumer for lighting the above premises for a term of one year from date hereof and to pay monthly for such energy and service in accordance with rates on the reverse hereof under Class ..... (2) to commence payments within one month from the date of connection.

SIGNED ..... ACCEPTED FOR THE CORPORATION BY .....

DATE .....191....

Floor Area—Net.....Sq. Ft. Date Connected .....191....

Installed Capacity.....Watts. " Meter Installed .....191.....No.....

RATES AND DISCOUNTS.

CLASS 1—RESIDENCE LIGHTING—A Service charge of 4c. per month per 100 sq. ft. of floor area, plus a Consumption charge of .....c. per Kilowatt Hour kw-hr.

CLASS 2—COMMERCIAL LIGHTING—For Stores, Theatres, Factories, Hotels, Offices, etc.

Consumption charge of .....c. per kw-hr. for first 30 hours' monthly use of installed capacity, and .....c. for each kw-hr. above.

DISCOUNTS—Less ....% on whole Bill if paid within .... days from date of Bill.

CONDITIONS.

1. The Consumer agrees to provide convenient and safe space for the Corporation's meters (for which no rental charges will be made), wires and all other appliances in said premises, and further agrees that no one who is not an agent of the Corporation or otherwise lawfully entitled to do so, shall be permitted to remove, inspect or tamper with the same, and that the properly authorized agents of the Corporation shall, at all reasonable hours, have free access to the said premises for the purpose of reading, examining, repairing or removing their said meters, wires and other material and appliances.

2. Meters and all other appliances of the Corporation, in said premises shall be in the care and in the risk of the Consumer, and if destroyed or damaged by fire, or any cause whatsoever, other than ordinary wear and tear, the Consumer shall pay to the Corporation the value of such meters and appliances, or the cost of repairing or replacing the same.

3. The Consumer hereby expressly authorizes and empowers the Corporation at its option to remove the meters and all other material and appliances installed at its expense and cut off the supply of electricity and terminate this agreement whenever any bills for said service are in arrears or upon violation by the Consumer of any of the terms and conditions of this agreement.

4. The Corporation agrees to use reasonable diligence in providing a regular and uninterrupted supply of electricity, but does not guarantee a constant supply of electricity, and will not be liable in damages to the Consumer for failure to supply electricity to said premises.

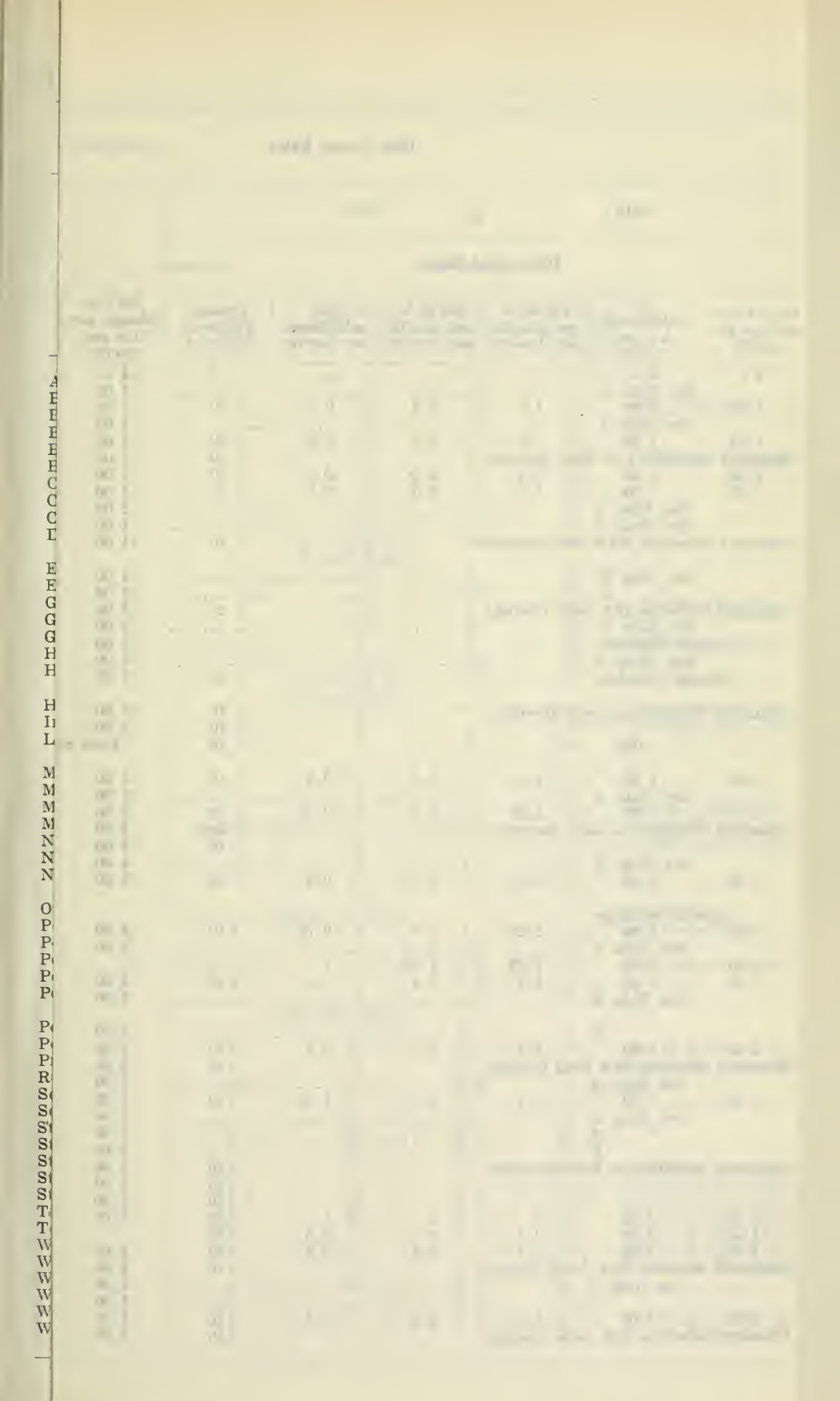
5. This agreement shall not be binding upon the Corporation until accepted by it through its proper officer, and shall not be modified or affected by any promise, agreement or representation by any agent or employee of the Corporation unless incorporated in writing into this agreement before such acceptance.

6. The Consumer agrees that on request of Corporation, he will deposit with the Corporation the sum of.....dollars to be held by Corporation as a guarantee that Consumer will fulfil all the terms of this agreement.

7. The Consumer will provide all lines on the premises and all lines connecting premises with the point of delivery, and maintain the same in efficient condition with proper devices, the whole according to the requirements of the Rules and Regulations of the Hydro-Electric Power Commission of Ontario.

8. This agreement shall continue in force after the term herein mentioned from year to year until terminated by a notice in writing, given by either party hereto at least one month before the end of the term or any yearly term thereafter.

9. It is agreed that the signatures of the parties hereto shall be binding upon their successors or assigns, and that the vacating of the premises herein named shall not release the Consumer from this agreement, except at the option and by written consent of the Corporation.



RATES IN USE IN MUNICIPALITIES

Municipality	Cost of Power to Municipality per h.p. per year 1914	1914	Base Power Rates 1912 — Flat Rates: 1st block per h.p. per year	Flat Rates: All additional per h.p. per year	Differential Rates: 1st 50 hr. per h.p. per month	Differential Rates: 2nd 50 hr. per month per kw-hr.	Differential Rates: All additional per kw-hr.	Prompt Payment Discount	Lighting Rates 1912 — Domestic: Service charge per h.p. per month	Domestic: 1st 50 hr. per month per kw-hr.	Domestic: 2nd 50 hr. per month per kw-hr.	Domestic: All additional per kw-hr.	Domestic: Prompt Payment Discount	Commercial: Per 100 sq. ft.	Commercial: Per kw-hr.	Commercial: 1st 30 hr. per month per kw-hr.	Commercial: All additional per kw-hr.	Commercial: Prompt Payment Discounts	Street Lighting 1912	Street Lighting 1918
Ayr	$	$	$	$	See Note A				¢	¢	¢	¢	%	¢	¢	¢	¢	%		
Baden	60.00				See Note A				1 00	4.3	2.9	0.4	10	4	5	12	5	10	4	5	10	6	10		$8.15 per $100 w. lamp
Barrie					1 00	1 00	4 5	3 0	0 4	10	1 00	4.2	2.8	0.3	10	4	5	12	5	10	4	5	10	6	10	$14 80 per 1000 w. lamp	$14 80 per 1000 w. lamp
Beeton					See Note A						1 00	4.6	2.8	0.3	10						4	4 5	9	4 5	10		$48 00 per Arc, $8 50 per 100 w. lamp
Bracebridge	21 89				1 00	1 00	3 9	2 6	0 3	10	1 00	3 9	2 9	0 3	10	4	5	12	5	10	4	5	10	6	10		
Brantford	25 00				First Standard Schedule 10% local discount					10	1 00	2.5	1 7	0 2	10	5	4	12	5	10 & 20	4	5	8	4	20	$9 65 per 100 w. lamp	$9 00 per 100 w. lamp
Brantford	25 00				1 00	1 00	4 4	2 2	0 25	10	1 00	3 8	2 2	0 25	10	6	6	8	6	20	4	3	6	3	10		$7 00 per 100 w. lamp
Brantford	25 00				1 00	1 00	4 7	2 5	0 3	10	1 00	3.7	2.5	0.3	10	4	4	10	4	10	4	4	8	4	10		
Brockville					See Note A						1 00	3 2	2.1	0.3	10						4	4	8	4	10		
Burgessville					See Note A						1 00	4 6	2 4	0 3	10						4	4 5	9	6 5	10		
Cobourg	15 00				First Standard Schedule 5% local discount					10	1 00	1 6	1 1	0.15	15	4	4 5	10	4 5	10	4	3	6c. 1st 25 hr. 3c next 75 hr.	0.15 0.10	10		
Comber					See Note B																4	5	10	6	10		
Delhi					A						1 00	4 7	3 1	0 4	10						4	5	10	6	10		
Dorchester					A						1 00	5 0	2 4	0 3	10						4	4 5	9	4 5	10		$12 00 per 100 w. lamp
Dresden	21 00				See Note A						1 00	4 6	2 8	0 3	10	4	4	12	4	25	4	4	8	4	25	$2 000 00 total	$9.50 per 75 w. lamp
Dunnville	30 00				See Note A						1 00	4 3	2 9	0 4	10						4	5	10	5	10		
Elmvale					Special Schedule						1 00	4 3	2 8	0 3	10		8	8	8	Net	4	4	8	4	20	$13 00 per 1000 w. lamp	$9 50 per 100 w. lamp
Elora					See Note A						1 00	3 9	2 0	0 3	10						4	4 5	9	4 5	10		
Hamilton	18 00				Special Schedule						1 00	2 1	1 4	0 2	25 & 10	4	5	8	5	10	4	3	6c. 1st 25 hr. 3c next 75 hr.	0 2	20		
Hamilton	18 00				First Standard Schedule 10% local discount					10																$15 00 per 40 w. lamp	$12 00 per 100 w. lamp
Ingersoll	21 00										1 00	4	2	0 25	10		10	10	10	10	4	4 5	10	10	10	$10 00 per 500 w. or 1000 w.	$12 00 per 800 w. lamp, $12 50 per 400 w. lamp
Jordan	10 00										1 00	3 4	2 0	0 3	10		10	10	10	6	4	4 5	9	4 5	10		$8 00 per 250 w. lamp, $11 00 per 400 w. series,
											First Standard Schedule 10% local discount				10		5	5	5	6		5	6	5	10		$12 85 per 1000 w. multiple lamp
Kingston	24 00										1 00	3 6	2 4	0 3	10	4	4.5	12	4 5		4	4	9	4 5	10		$17 00 per 1000 w. lamp
Milton	24 00				See Note A						1 00	3 1	2 1	0 3	10						4	4	8	4	10		$6 00 per 100 w. lamp
Milton	24 00				1 00	1 00	4 25				1 00	3 7	2 5	0 3	10						4	4	8	4	10		$6 00 per 100 w. lamp (approx.)
Morrisburg	30 00										1 00	1 7	1 1	0.15	10	4	4	12	4	10	4	4	8	4	20	$15 50 per 80 w. $11 per 60 w. $8 per 40 w.	$13 00 per 80 w. $11 per 60 w. lamp, $8 per Arc
Newcastle	18 00				First Standard Schedule 10% local discount					10	1 00	4 5	3 0	0 4	10		Special Rates Tie per mo. minimum				Special rates 7½ per mo. minimum					$30 00 per 1000 w. lamp	$4 00 per 1000 w. lamp
New Toronto												10	10	10	10	4	5	10	5	10	5	6	10	6	10	$6 00 per 1000 w. lamp	$6.00 per 1000 w. lamp, and renewals
Norwich	30 00				See Note B						1 00	5	2	0 25	10		4	12	4	10	4	4	8	4	10		
Oakville	15 00				1 00						1 00	5.5	2 3	0 3	10	4	4	12	4 5	10	4	4	8	4	10		$12 00 per 1000 w. lamp, $9.00 per 60 w. lamp
Orangeville					Special Schedule												10	10	10	10							
Orillia	15 00				Special Schedule																	Special schedule				$45 00 per Arc	$45 00 per Arc, $10 00 per 600 w. lamp
Orillia	15 00				1 00																					$12 00 per 80 w. lamp	$12 00 per 80 w. lamp
Owen Sound					See Note A						1 00	1 7	1 1	0.16	10	4	5	12	5	10	4	4	8	4	10		
Owen Sound					1 00							3 1	2 4	0 4	10						4	4 5	9	4 5	10	$5 00 per 60 w. $8.00 per 100 w. lamp	$5 00 per 60 w. $8.00 per 100 w. lamp
Owen Sound					1 00	1 00	3 4				Same as 1912					4	4.5	8	4.5	10	4	4 5	9	4 5	10	$1 00 per 60 w.	$1.00 per 100 w. lamp
Paris					See Note A						1 00	3 7	2 4	0 3	10	4	4.5	12	4.5	10	4	4 5	9		10		
Parkhill											00	2 1	1 4	0 3	10						4	3	6	3	10		
Parry Sound					A										10												
Penetanguishene					A						1 00	1 8	1 2	0 15	10						4	4	8	3	10		
Port Arthur					First Standard Schedule 10% local discount					10	1 00	5 5	3 7	0 5	10	3	5	12	5	10	4	5	10	5	10	$18 00 per 1000 w. lamp	$18 00 per 1000 w. lamp
Prescott					See Note A						1 00	4 3	2 3	1 6	0 2	10	4	4 5	12	4 5	10	4	4	8	4	10	$12 00 per 100 w. or 80 w. lamp	$12 00 per 100 w. lamp, $12 00 per 80 w. lamp
Rainham					See Note A						1 00	4 7	3 1	0 4	10						4	5 5	11	5 5	10		
Renfrew					1 00	1 00	4 1				1 00	4 9	3 3	0 4	10		10	10	10	5 to 20	4	5	10	6	10	$15 00 per 100 w. lamp	$15 00 per 100 w. lamp, $12 00 per 75 w. lamp
Ridgetown					See Note A						1 00	4	2 6	0 4	10						4	5	10	6	10		
Rockton					A						1 00	4	3 4	0 4	10						4	6	12	6	10		
St. Mary's					A						1 00	3 7	3 1	0 4	10						4	5	10	5	10		
Sandwich											1 00	3 7	2 4	0 3	10						4	5	10	5	10	$11 00 per 100 w. lamp	$11 00 per 100 w. lamp, $6.00 per Arc
Simcoe					1 00	1 00	4				1 00	6	2 4	0 3	10	4	6	12	5	10	4	4	8	4	10	$11 00 per 80 w. $12 75 per 100 w. lamp	$9 per 80 w. $11 per 75 w. lamp, $6 per Arc
Smith's Falls					1 00	1 00	4				1 00	3 6	2 4	0 3	10	4	4 5	12	4 5	10	4	4 5	9	4 5	10	$12 00 per 75 w. lamp	$12 00 per 75 w. lamp
Southampton					1 00	1 00	4				1 00	4	2 5	0 3	10	4	5	12	5	10	4	5	10	5	10	$13 50 per 80 w. lamp	$11 00 per 80 w. lamp
Stayner																4	5	12	5	10	4	3	8	3	10	$9 00 per 1000 w. lamp	$9 00 per 1000 w. lamp
Stratford											Same as 1912					4	5	8	5	10	4	4	8	4	10	$30 00 per 1000 w. lamp	$30 00 per 1000 w. lamp
Strathroy					1 00	1 00	4				1 00	3	2 4	0 2	10	4	5	12	5	10	4	4	8	4	10	$10 00 per 100 w. lamp	$10 00 per 100 w. lamp
Sturgeon Falls					1 00	1 00	4				1 00	3	2	0 3	10	4	5	12	5	10	4	4	8	4	20	$10 00 per 75 w. lamp	$10 00 per 75 w. lamp, $9 00 per 60 w. lamp
Sudbury					1 00	1 00	4				1 00	3	2	0 3	10	4	5	12	4	10	4	4	8	4	10	$18 00 per 2500 w. lamp	$18 00 per 2500 w. lamp $9 00 per 1000 w. lamp
Sutton					1 00	1 00	4				1 00	3	2	0 3	10						4	4	8	4	10	$12 00 per 100 w. lamp	$12 00 per 100 w. lamp
Tara											1 00	3	2	0 1	10		8	8	8	10	4	4	8	4	10		$10 per 250 w. lamp $10 per 100 w. or 60 w. lamp
Tavistock											1 00	3	2	0 2	10	4	4	10	4	20	4	4	8	4	25		

Note A
Note B

FIRST STANDARD SCHEDULE: Base Rates for Power Service.

H.P. of Motors or Peak Load	1-3	4-10	11-25	26-50	51-100	101 up
Flat rate per h.p. per year, based on installed h.p. or maximum demand	$50	$48	$45	$43	$41	$40
Differential rates. Fixed charge per installed h.p. per year or maximum demand	$15.00	$14.40	$13.80	$13.20	$12.60	$12.00
Meter rate per kw-hr. of consumption	3.5c.	3.0c.	2.5c.	2.0c.	1.5c.	1.5c.

SPECIAL SCHEDULE: Base Rates for Power Service in Hamilton.

H.P. of motors or peak load	1-3	4-10	11-25	25-50	51-100	101 up
Flat rate per h.p. per year, based on installed h.p. or maximum demand	$37.50	$36.00	$33.75	$32.25	$30.75	$30.00
Differential rates, fixed charge per installed h.p. per year or maximum demand	$6.00	$6.40	$6.75	$7.50	$8.25	$9.00
Meter rate per kw-hr. of consumption	2.6c.	2.25c.	1.9c.	1.5c.	1.1c.	.95c.

Rates Recommended and in Use for Rural Power

District	Municipality Supplying the Power	Service Charge per Month	Power Charge		Prompt Payment Discount from Meter rate	Remarks
			Flat Rate per h.p. per year	Alternative Meter rate per kw-hr.		
Etobicoke Township	Mimico					Humber Bay District gets house Lighting service at 4c. per 100 sq. ft. and 5c. per kw-hr.
Grantham Township		$2.00	$22.00	4.5c.	10%	No service is being given but Contracts are being obtained.
Norwich, North "	Norwich	2.00	36.00	4		
Oxford, North "	Ingersoll	2.00	36.00			
Oxford, West "	Woodstock	3.00	30.00			
Sebringville	Stratford					See Table of Municipal rates.
Petersburg	Baden					" "
St. Agatha	Baden					" "
Toronto Township	Toronto Township	2.00	36.00			
Waterloo "	Preston	2.00	30.00	5	10	(No service being given but Contracts are being obtained).
West Hamilton	Dundas					See Table of Municipal rates.
Yarmouth Township	St. Thomas	3.00	36.00			
York "	Toronto					Districts close to City Limits served at Toronto rates

MUNICIPAL PURCHASES

An important branch of Municipal work is the purchase of material and apparatus for the maintenance and operation of existing lines in the substations, equipment and extensions, and the apparatus and material required for Municipal and Electrical Departments of the Province, and many of the Provincial Institutions.

The System and the Municipalities require yearly large quantities of material and apparatus. Appreciating that this could be purchased to best advantage through the Commission, buying from reliable sources, at wholesale prices, the Commission has for several years been acting in this capacity, and at the present time is purchasing for seventy-four Municipal Departments.

If the Municipalities will co-operate to an even greater extent, and place their yearly requirements through the Commission, notifying it in advance, arrangements can be made which will enable each Municipality to obtain Meters, Lamps, Transformers and all the various appliances and devices commonly used, at prices consistent with these arger quantities. The Commission already carries in stock in its storehouse in Toronto a supply of these various appliances and devices, and if the demand is sufficient, this stock will be enlarged to ensure prompt shipment of all of the various items generally used.

By notifying the Commission in advance, so that arrangements can be made for stock, the delays in shipping materials ordered at the last moment will be minimized.

The Commission has in operation a complete Laboratory equipment, which is continually examining, testing and standardizing, and in buying through the Commission, Municipalities obtain the benefit of this expert service, which acts as a check against the supply of inferior material.

The general work of the Engineering and Purchasing Staffs covers a wide field, ranging from the purchase and installation of the largest Electrical and Hydraulic apparatus for the equipment of power and lighting plants in various substations and municipalities, down to the minor supply items.

The services of this expert advice are offered to any of the Municipal Electrical Enterprises in the Province.

A summary of the more important purchases made for the Municipalities during 1913 is approximately as follows:

MUNICIPAL PURCHASES

—	Poles		Overhead Line and Street Lighting Material	Transformers		Carbon and Tungsten Lamps		Wattmeters		Switch Gear	General Supplies	Motor and Apparatus.	Miscellaneous	Total Value
	No.	Value		Kw.	Value	No.	Value	No.	Value					
		$ c.	$ c.		$ c.		$ c.		$ c.		$ c.		$ c.	$ c.
Acton	21	91 45	1,258 87	15	577 80	1,198	360 82	1	63 60		11 12		3 50	2,367 16
Baden			909 86	10	140 00	722	238 32	23	275 30		255 86		22 30	1,841 64
Bobcaygeon			384 42										1,000 00	1,384 42
Barrie						572	262 78						77 00	339 98
Beachville	2	36 00	261 56	20	200 00	394	104 75				30 00		10 00	642 31
Belleville Asylum								1	150 00					150 00
Beaverton	110	249 50	2,101 57											2,351 07
Berlin	12	99 00	414 85			9,102	3,665 02				9 00			4,187 87
Brampton	90	385 75	614 54			1,734	628 12	31	263 25					1,891 66
Brockville	119	257 00				575	192 62							449 62
Brantford			528 60			24	13 92							542 52
Caledonia	1	3 25	76 16	5	90 00			18	157 80				1 80	329 01
Cannington			523 83											523 83
Chesterville			2,316 50											2,316 50
Clarksons	151	750 00	3,053 69	20	690 00	300	96 00							4,589 69
Cooksville			51 75											51 75
Clinton	100	164 50	948 33			823	246 34							1,359 17
Coldwater			120 49	40	362 57	650	208 00	22	234 00		183 27			1,108 33
Collingwood			4,151 38			1,394	659 90				1 05			4,812 33
Cornwall						500	160 00							160 00
Dundas	205	592 55	3,586 94	20	195 54	1,250	182 50	217	1,813 60		151 07		121 88	6,744 08
Elmira	539	1,738 75	4,477 90	193½	1,735 18	468	180 78	49	572 15					8,704 76
Elmvale			662 29	35	275 00	672	224 74	100	628 50	64.80	1,221 96			3,077 29
Georgetown	323	721 25	842 26	189½	2,309 00	468	215 44	296	2,359 60		368 08		57 00	6,872 63
Galt			20 63			12,932	4,768 34	1	159 00		175 00		121 94	5,244 91
Goderich	115	143 75	4,255 49			2,034	643 73							5,042 96
Guelph			14 74	300	2,250 00	3,596	1,042 68							3,307 42
Hagersville			456 92	3	50 00	24	3 90	26	327 20					838 07
Hamilton						55,454	6,033 53							6,033 53
Hamilton Asylum						2,248	597 08							597 08
Hespeler						886	266 42							266 42
Ingersoll						350	65 50	1	245 00	2 27	33 00			345 87

Kincardine			346 46	15	210 00	100	27 00							583 46
London	350	1,386 00	20,978 42	127	860 30	13,518	11,103 26	470	4,818 00		444 00		11 90	39,601 88
London Asylum						1,470	441 61							441 61
Merritton						100	32 00							32 00
Markham						7,202	2,331 64	15	244 10					2,575 74
Milton			3,570 75	18	438 00	1,160	400 44	1	26 00		153 60			4,588 79
Midland						1,246	646 82	1	180 00		20 10	1,600		2,446 92
Mimico	367	959 50	4,284 36	174	1,523 04	1,918	689 82	131	1,332 35		13 00			8,802 07
Mitchell						670	239 56							239 56
Morrisburg						500	168 00							168 00
New Hamburg						1,494	434 24				50 50		6 80	491 54
New Toronto	165	642 00	250 25	10	140 00									1,032 25
Norwich	75	187 25	2,145 75	4	180 00	868	273 22					270 50		3,056 72
Ottawa						5,840	2,898 16					200 00		3,098 16
Paris						1,672	625 54							625 54
Penetang			2,270 92	70	584 65	300	283 50	42	860 50		100 80			4,100 37
Peterboro			3,120 34	30	300 00									3,420 34
Petersburg	8	72 00	292 64	25	341 87									706 51
Port Arthur			4,797 87			14,914	6,214 92							11,012 79
Port Credit	188	503 75	2,345 52	48	880 00	424	429 92	56	498 65		61 38			4,719 22
Port Stanley			259 44			292	126 72							386 16
Preston			4,999 90	3	76 00	4,618	1,482 52	4	214 68		127 74		13 75	6,914 59
Prescott			3,257 74			200	65 00				1 50			3,324 24
Rockwood	2	11 20	490 05			249	80 05	12	103 65		34 32			719 27
Seaforth			902 27	25	240 00	1,294	419 26	11	143 00		302 99		142 00	2,149 52
Stratford			351 79	15	210 00	8,110	2,264 08	51	440 00		254 22			3,518 09
St. Mary's						1,386	435 18							435 18
St. Thomas	88	366 10	961 65	6	100 00	1,050	197 50				25 00		410 00	2,061 25
Stayner			763 70	45	336 00	350	85 50	130	1,117 75					2,302 95
Streetsville	69	372 25	476 12	150	1,350 00			3	381 16					2,579 53
Thorndale	70	146 00	1,267 91	33	355 30									1,769 21
Thamesford	27	56 00	1,465 91	83	844 70									2,366 61
Tillsonburg						2,595	1,013 27	1	32 50					1,045 77
Toronto						12,108	7,070 44							7,070 44
Waterdown			344 38	1	40 00	174	62 18	25	212 70					659 26
Waterford			16 99											16 99
Waterloo			2 50			2,818	1,014 86				246 20			1,263 56
Welland	160	355 00	1,494 52	90	560 00	1,940	836 85	403	3,436 00	28.00	161 27		625 00	7,496 64
Weston			24 00			600	330 08				50			355 58
Winchester	187	676 00	2,770 01	110	1,152 00									4,598 01
Woodstock	10	125 00	148 36			3,748	1,550 20	2	43 00		42 32		317 00	2,225 88
Grand Total	3,554	11,090 80	96,434 14	1,933	19,596 95	154,230	65,434 57	2,144	21,333 04	95.07	4,478 85	2,070 50	2,042 07	223,475 99

MUNICIPAL ELECTRICAL INSPECTION

Early in the year 1913 proofs of the book of Rules and Regulations governing inside wiring were produced and submitted to engineering bodies, manufacturers, contractors, electrical workers and jobbers, as well as the Fire Underwriters. These bodies were requested to go carefully into the proposed regulations and submit any criticisms or possible objections to the Commission, in order that the adopted regulations would be thoroughly in keeping with local conditions, and not in any way cause unnecessary confusion or serious loss to the various interests affected by their enforcement. After sufficient time had been given to thoroughly consider the proposed rules and regulations, the criticisms were received.

The regulations follow closely along the lines of The National Electrical Code, which has been the adopted standard in Canadian and American practice, and the adopted regulations of the Fire Underwriters. In the regulations, the arrangement of the code has been altered and improved, and rules for the protection of life have been added which are not to be found in the National Code.

In addition to these rules and regulations, a complete by-law has been written and printed in pamphlet form. This by-law is for adoption by the various municipalities where inspectors are appointed, and will save the municipalities much confusion and loss of time, and also provide a uniform system of inspection.

In this by-law the inspectors' duties and authority are well defined, and a uniform scale of inspection fees has been compiled and included in the said by-law.

During the past few months, a large number of municipalities have been visited and the nature of the work explained to them for the purpose of assisting them in the selection and appointment of inspectors. Much valuable information has been imparted to these municipalities by these visits, and in a number of places appointments may be made at any time now .

The following municipalities have been visited, and in some cases revisited:—

Fort William	Lindsay
Toronto	Bobcaygeon
Hamilton	Bowmanville
London	Niagara Falls
Peterboro	Welland
Ottawa	Georgetown
Kingston	Preston
Port Arthur	Galt
Belleville	Berlin
Port Hope	Hespeler
Cobourg	Waterloo
Oshawa	Stratford
Oakville	Clinton
St. Catharines	Goderich
Port Dalhousie	Collingwood
Newcastle	Seaforth
Whitby	

The city of Ottawa have appointed their inspectors, and the work is being carried out in a satisfactory manner, and it is expected that at any time appointments will be made in the cities of Toronto, Hamilton, London, Goderich, Peter-

boro', Berlin, and it has been arranged that the surrounding municipalities will be included in each case.

So far as the work of the Department is concerned, everything is in a satisfactory condition to carry out and supervise the general direction of the inspection systems, and it now rests with the municipalities to take advantage of the legislation enabling them to appoint inspectors for the purpose of enforcing the rules and regulations.

The general concensus of opinion among the electrical interests is that this regulation provides for a long-felt want, and that an effective system of inspection is welcomed by the electrical interests as a whole.

FAIR DEMONSTRATIONS

Dundas Exhibition—October 31st to November 2nd, 1912

A demonstration of electrical household appliances and motor-driven farm machines was made at Dundas on the evenings of Oct. 31st, Nov. 1st and the afternoon and evening of Nov. 2nd. The exhibit was held in a vacant store in the main street of the town, and was the centre of considerable interest for the three days during which it was open. Demonstrators were on hand to operate and explain the various uses of the appliances, and all farm machinery was shown in actual operation.

Women's Institute Convention—November 14th and 15th, 1912

Arrangements were made in November, at the request of the Department of Agriculture, for an exhibition of electrically-operated appliances at the annual convention of the Women's Institute, held in the Guild Hall, Young Women's Christian Association, Toronto.

Various appliances and machines, consisting of dairy machinery, vacuum cleaners, washing and sewing machines, electric fans, heating appliances, etc., were exhibited in operation, between the sessions of the convention, and three demonstrators were employed to explain the operation of the numerous articles which made up the display.

Collingwood Demonstration—April 24th to 28th, 1913

A request was received from the municipality of Collingwood late in January for an exhibition during the inauguration of power service on February 24th. Arrangements were accordingly made for an exhibition along the lines of previous demonstrations of this sort, consisting of an electrical kitchen with a collection of small utensils and a washing machine; a dining-room arranged with various table and buffet utensils, and a dairy room equipped with a cylinder churn, a butter worker and a cream separator, the whole display being designed to represent a cross-section view of a farmer's residence.

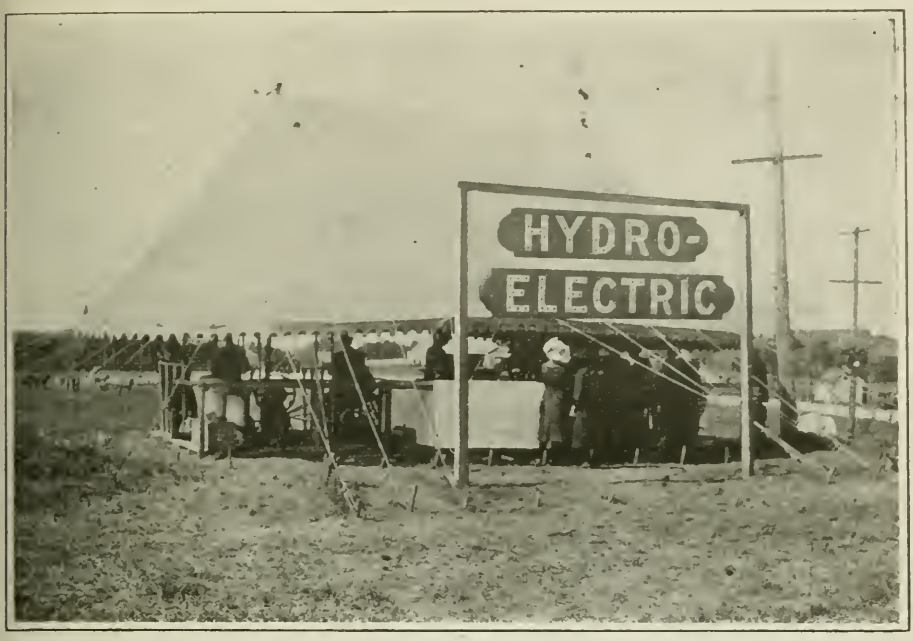
The farm had equipment that had been shown throughout the country, namely, a grinding mill, ensilage cutter, straw cutter, circular saw and pump, were shown in the fourth and last section.

The display which was made in a store in the business section of the town, was largely attended during the three days that it was open and meals were served on several occasions to the town officials and guests.

Barrie Demonstration—April 14th to 19th, 1913

Following the Collingwood demonstration, arrangements were made to ship the apparatus and appliances to Barrie for a display in the Opera House in that municipality. The stage here was arranged as a kitchen, dining-room and dairy, and a milking machine, grinder, ensilage cutter, force pump with pump jack, etc., arranged to demonstrate the various uses of electricity on the farm.

During the time that the exhibition was in progress, toast, coffee, biscuits, etc., were prepared on the electrical appliances and served by the demonstrator. The Honorable Mr. Beck addressed a large audience on the evening of the inauguration of the power service.



Renfrew Demonstration

Renfrew Demonstration

Seaforth Demonstration—June 27th, 1913

A small exhibit of electrically operated household appliances, an automatic water pump and milking machine was made at Seaforth on Rally Day, June 27th, 1913. The display, particularly the milking outfit, occasioned considerable interest, and was under the supervision of capable demonstrators.

Renfrew Fair—September 17th, 18th and 19th, 1913

A comprehensive display of electrically operated household appliances and motor-driven farm machines was shown at the Renfrew Fair on the 17th, 18th and 19th of September, 1913. The exhibition was housed under a large marquee tent in the Fair Grounds, and consisted of a complete dairy outfit, mechanical milking outfit, pump, grinder, saw and a representative complement of household appliances.

During the Fair eight cows were milked each day with the milking machine. The milk thus obtained was skimmed in a separator, and the cream used by the demonstrator for demonstrating purposes in connection with the household appliances.

Goderich Agricultural Exhibition—September 17th, 18th and 19th, 1913

Arrangements were made at the invitation of the Goderich Fair Association for a display of electrically operated household appliances and farm machines, at the Goderich Agricultural Exhibition, Sept. 17th to 19th, 1913. A milking machine and dairy outfit were shown at this Fair, in charge of a skilful demonstrator.

Fergus Fair—September 23rd and 24th, 1913

An exhibit of electrical household appliances was made at the South Wellington Fair, in Elmira, on September 23rd and 24th, 1913.

This display consisted of a representative collection of household appliances which were shown in actual operation, under the supervision of a competent demonstrator.

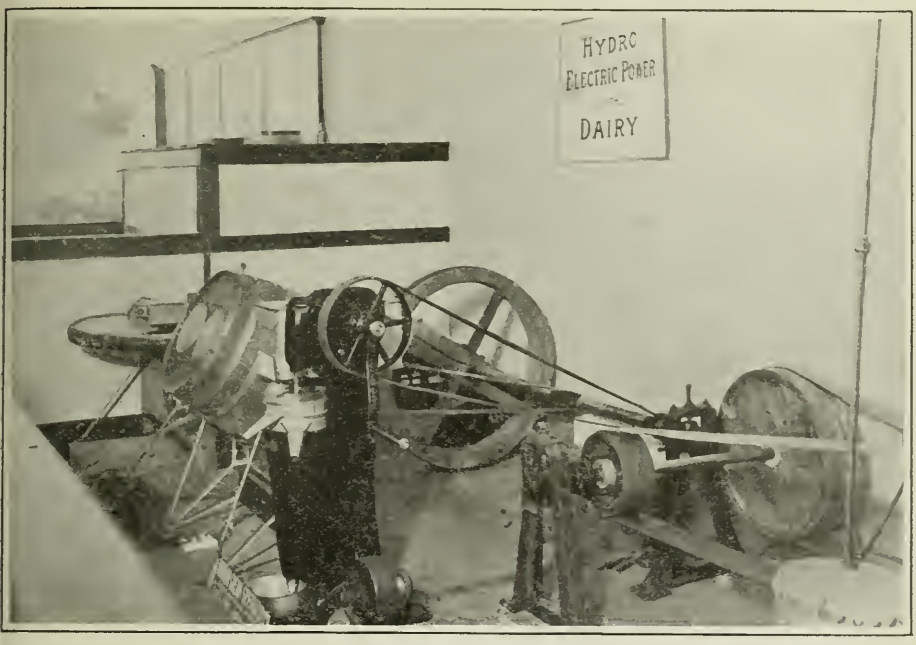
Prescott Fair—October 1st and 2nd, 1913

Arrangements were made in September to ship the exhibit used at the Renfrew Fair to Prescott, for a demonstration at the Prescott Fair, which was held on Oct. 1st and 2nd, 1913. Unfortunately the Fair was not a success, owing to inclement weather, and although the equipment was installed, there was not sufficient attendance to warrant its operation, and the exhibit was therefore removed and returned to Toronto.

Coldwater Fair—September 29th and 30th, 1913

The Coldwater Fair Association solicited a demonstration of electrically operated household and farm appliances at the Coldwater Fair during the latter part of August, and arrangements made for a complete exhibit of electrical household appliances and motor-driven farm machines, consisting essentially of a complete dairy outfit. mechanical milking outfit, several styles of pumps and grinders, as well as washing machine, vacuum cleaner and numerous small heating appliances.

The display was under the direct supervision of two competent demonstrators, and while the Fair was in progress several cows were milked each day. The milk thus secured was "skimmed" by the separator in the dairy equipment, and later utilized by the demonstrator of the electrical household appliances.



Collingwood Demonstration

Collingwood Demonstration

Elmvale Fair—October 1st and 2nd, 1913

The Elmvale Fair Association also presented an application early in Septem- for a demonstration similar to that which had been arranged for the Coldwater Fair, and as a result the equipment exhibited at Coldwater was moved to Elmvale and displayed there for the three days following the Coldwater Fair.

Markham Fair—October 1st, 2nd and 3rd, 1913

The Markham Fair Association, late in September, requested an exhibit at the Markham Fair similar to that of the previous year, and arrangements were made for a display accordingly of household appliances, under the supervision of a competent demonstrator.

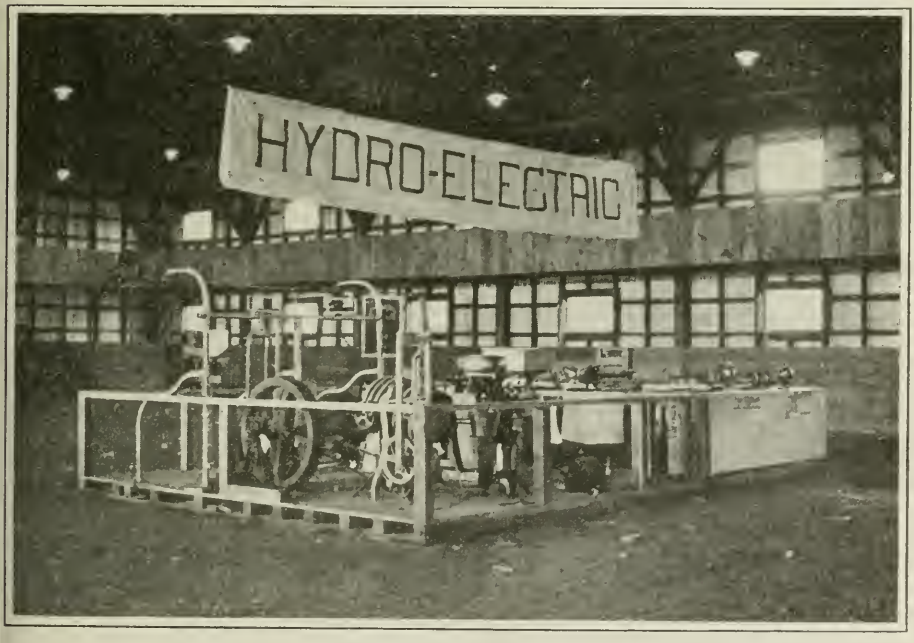
Elmira Demonstration—October 29th and 30th, 1913

During the latter part of October, the Municipality of Elmira decided to hold a Fair to celebrate the inauguration of Hydro-Electric service in the town, and accordingly applied for the loan of sufficient apparatus to provide for a representative display.

The Fair was held in the local skating rink and the Electrical exhibit consisted of a collection of electrically driven household appliances, and a number of motor-driven farm machines which comprised a complete Dairy outfit, Double-unit Milking outfit, Circular Saw, Pump and Grinder. All apparatus was in charge of competent demonstrators and shown in actual operation: the milking machine, in particular, being operated several times a day, and occasioning an unusual amount of interest.

The Hon. Mr. Beck addressed those attending the Fair on the evening of the 29th, and gave an interesting description of the progress of electrical adaption in the rural districts of the Continent of Europe.

Goderich Demonstration



Coldwater Demonstration

RURAL DEMONSTRATIONS

Threshing with the Individual Threshing Machine, driven by 5 h.p. Motor

The threshing demonstrations last year were made with 25 h.p. equipments, and from this experience it was decided to demonstrate this year with individual equipments driven by 5 h.p. motors. Arrangements having been made to start the demonstrating at a certain date, the early threshing season prevented us from threshing at all the places scheduled, although the demonstrations were made at the following farms:—

B. C. Edward's, Dereham Township, near Ingersoll.
W. C. Edward's, Dereham Township, near Ingersoll.
J. C. Karn's, West Oxford Township, near Woodstock.
Chas. Fletcher's, North Norwich Township, near Newark.

Results noted are given below:

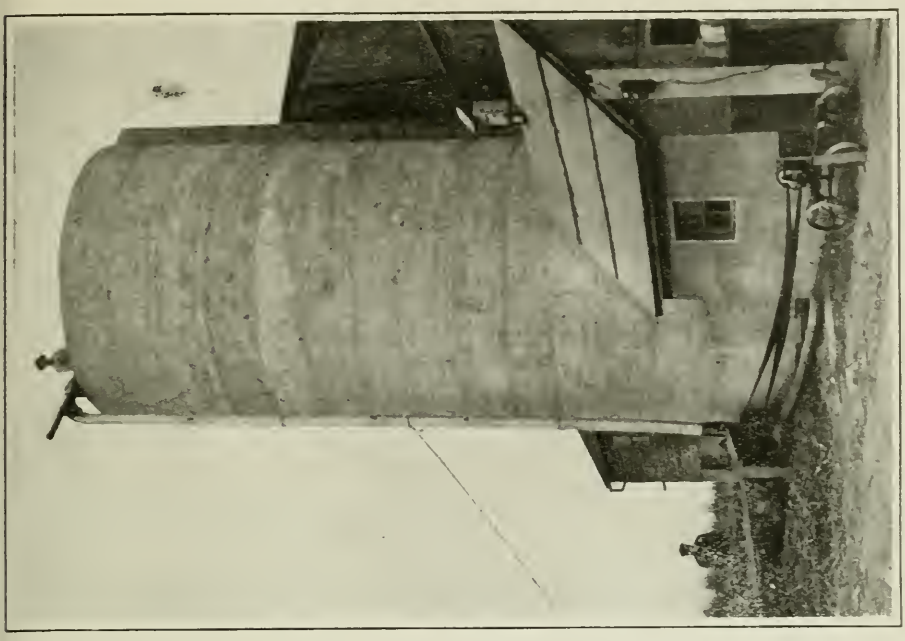
At B. C. Edward's, Dereham Township, Oct. 11th and 12th:

Amount of grain threshed	37½ bush. of wheat.
	368 bush. of oats.
Conditions of grain	Dry. Straw medium length and fine.
Running time	On wheat 2 hr.
	On oats 7 hr.
One minute demand	7 h.p.
Average demand	4.8 h.p.
Total kw-hr.	32
Total cost at 3c. per kw-hr	96c.
Cost per bu. wheat	.57c.
Cost per bu. oats	.2c.
Average bush. per kw-hr.	127
Notes *re* straw	Delivered straight back to staging.
Oats per hour	52.5 bush.
Wheat per hour	18.7 bush.
Thresher speed	1250 r.p.m.

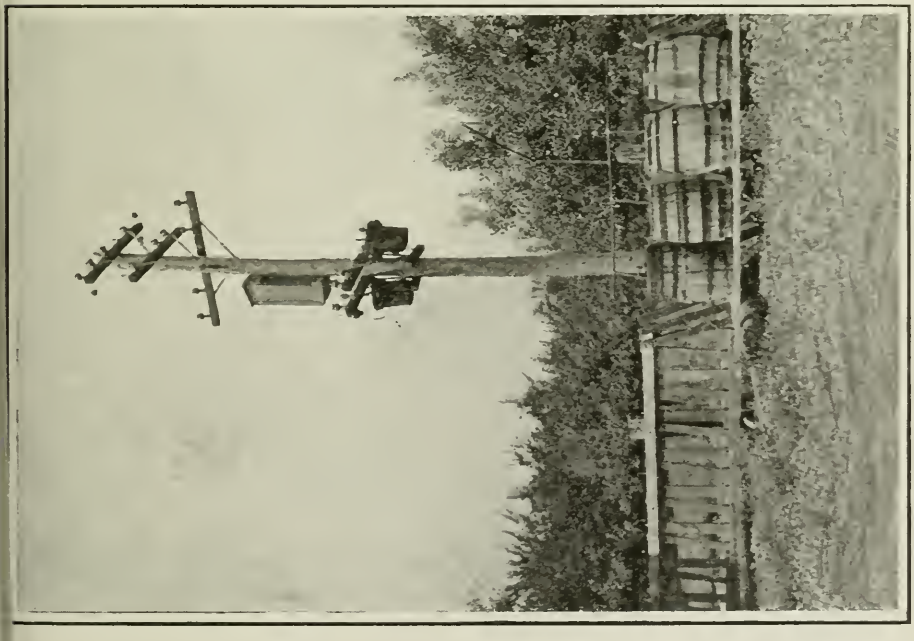
This was the first place at which the machine was used and the results were not as good as later in the season, when the machine had been properly adjusted.

At W. C. Edward's, Dereham Township, October, 31st:

Amount of grain threshed	290 bush. of oats.
Condition of grain	Dry. Straw medium length and fine.
Running time	3¼ hours.
One minute demand	7 h.p.
Total kw-hr.	17 (estimated).
Total cost at 3c. per kw-hr.	51c.
Cost per bu.	.17c.
Bush. per kw-hr.	17
Notes *re* straw	Delivered by side carrier to the mow.
Oats per hour	89.2 bush.
Thresher speed	1250 r.p.m.



Blower Type of Ensilage Cutting and Silo Filling Outfit



Typical Service Installation

At J. C. Karn's, West Oxford, Nov. 5th, 6th, and 7th:

NOTE—Run to demonstrate its use so was only operated at intervals.

Amount of grain threshed	50 bush. oats. 181½ bush. beans.
Total kw-hr	On oats 2.9 On beans 1.6.
Total cost at 3c. per kw-hr	13.5c.
Cost per bu. oats	.17c.
Cost per bu. beans	.25c.
Speed of thresher	1,000 r.p.m. while running on oats, 630 r.p.m. while running on beans.
Demand, not measured	
Oats per kw-hr.	17.2 bush.
Beans per kw-hr.	11.6 bush.

At Chas. Fletcher's, N. Norwich Township, Nov. 10th to 15th:

NOTE—Hungarian Oats; notes were not taken of the grain threshed, etc. The results reported were very good, the grain coming clean with no carrying over.

Silo Filling with Individual Equipment driven by 5 h.p. Motor

During the Fall individual equipments for filling silos, driven by 5 h.p. motors were used at the following places:—

John Leigh's, Lot 23, Con. 2, West Oxford Township.
B. C. Edwards', Lot 2, Con. 1, Dereham Township.
W. O. Edwards', Lot 3, Con. 1, Dereham Township.
Chas. Fletcher's Lot 22, Con. 4, N. Norwich Township.
M. J. Cornwall's, Lot 21, Con. 4, N. Norwich Township.
Queen Alexandra Sanitarium, Byron, London.

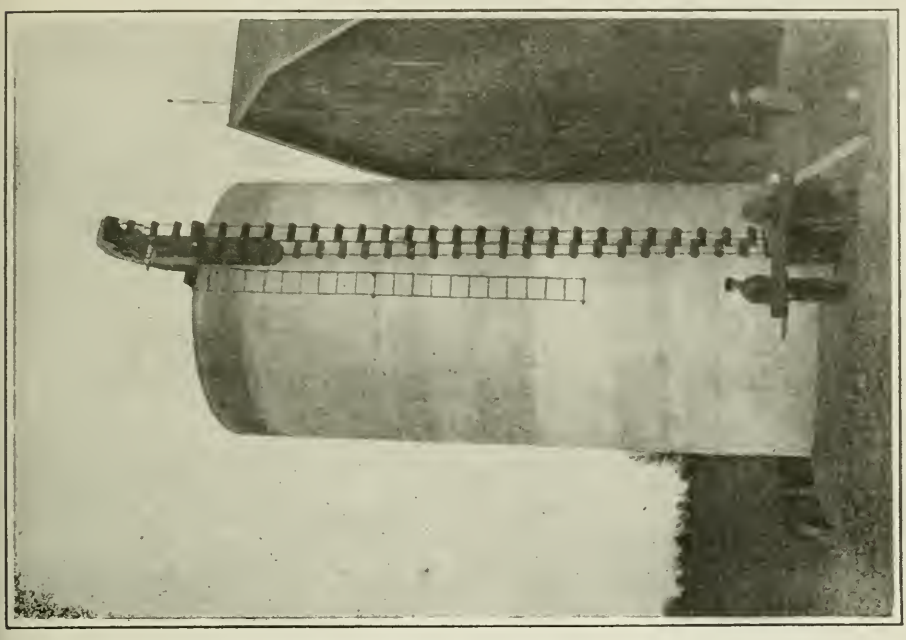
Notes were also taken on a carrier outfit driven by a 5 h.p. motor and an elevator outfit at—

D. W. Clark's, West Oxford, and Geo. Raymond and Sons, North Oxford.

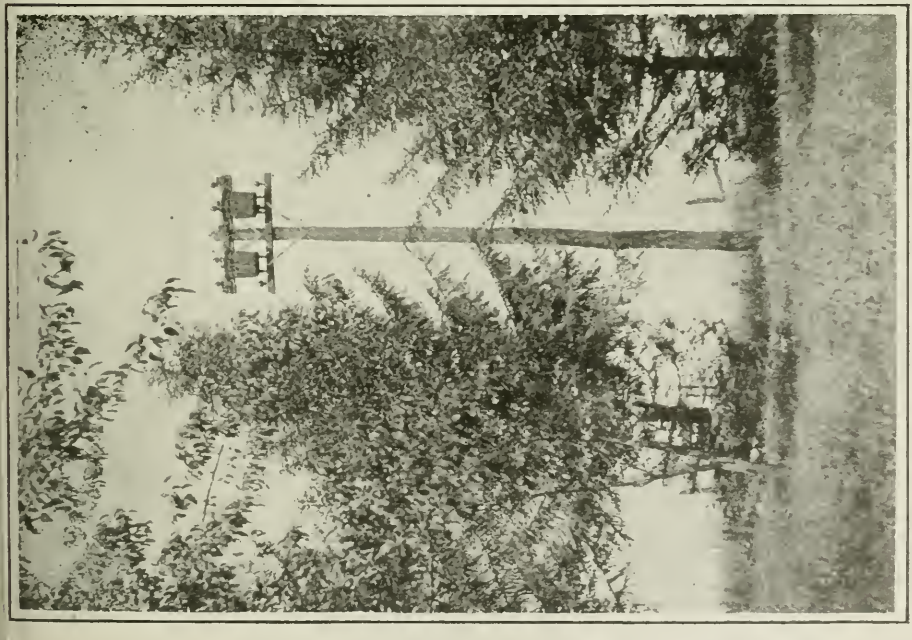
Following is the detail of work done, current used, and other field data:

John Leigh's, West Oxford, Sept. 18th to 24th.

Box used	10 in. blower.
Size and Shape of Silo	Round 14¼ by 35½.
Height to elevate	32½ ft.
Capacity	5662.5 cu. ft.
Detail of Labor—	
2 teams and drivers	36 hr. 55 min.



Elevator Type of Ensilage Cutting and Silo Filling Outfit



Typical Service Installation

4 men	29 hr. 25 min.
3 men	4 "
2 men	3 " 30 "

Not including setting up or taking down.

Amount put in	28½ ft.
Estimated weight	85 tons.
Total kw-hr	191
Total cost at 3c. per kw-hr.	$5.73.
Average h.p.	6.95
Average tons per hr.	2.64
Kw-hr. per ton	2.25
Cost per ton	6.8c.
Distance to field	60 rods.

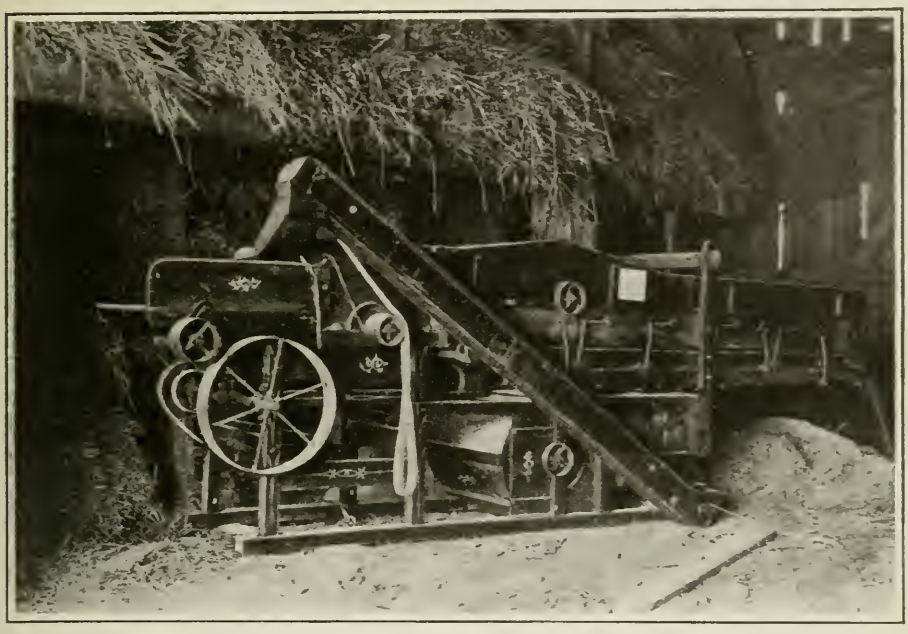
NOTES—Corn was not shocked and we had rain several times while filling. It was wet most of the time. Material was cut in half-inch length.

B. C. Edwards, Dereham Township, Sept. 27th to Oct. 1st:

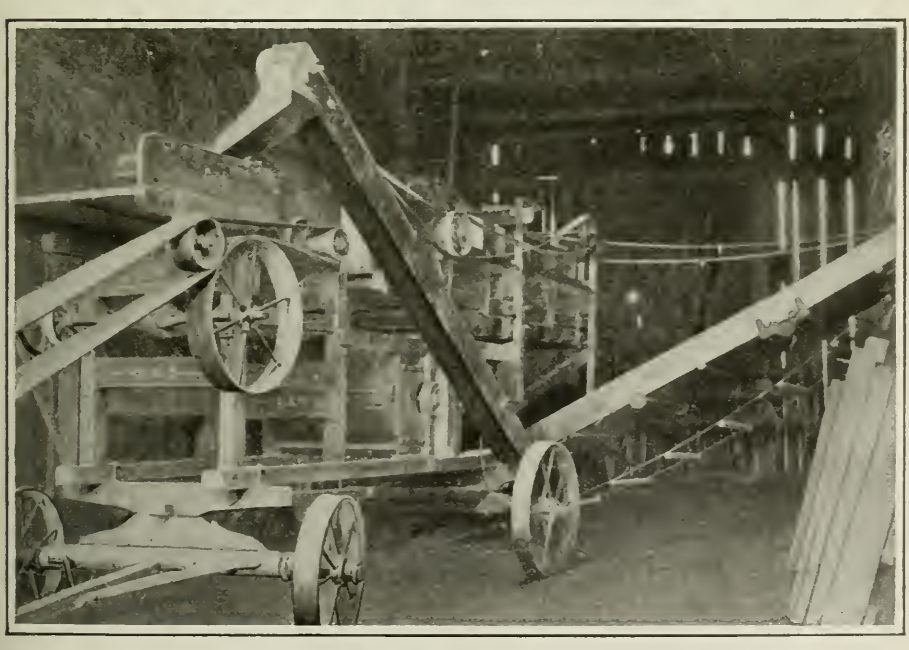
Type of box	10 in. blower
Size and Shape of Silo	Round, 12 ft. by 34 ft.
Height of elevate	32 ft.
Capacity	3958 cu. ft.
Detail of Labor—	
Two teams and drivers and 3 men	21½ hours
Amount put in	32 ft.
Estimated weight	72 tons
Total kw-hr	116
Total cost at 3c. per kw-hr.	$3.48
Average h.p.	7.2
Average tons per hr	3.35
Kw-hr. per ton	1.61
Cost per ton	4.8c.
Distance to field	3 rods
Corn	Dry
Cut	1 in.

W. O. Edwards, Dereham Township, Oct. 2nd to 10th:

Size and shape of Silo	Round, 14ft. by 35 ft.
Height to elevate	33 ft.
Capacity	5388 cu. ft.
Detail of Labor—	
Two teams and drivers and 3 men	28 hours.
Amount put in	31 ft.
Estimated weight	95½ tons
Total kw-hr.	147
Total cost at 3c. per kw-hr.	$4.41
Average h.p.	7.2
Kw-hr. per ton	1.54



Individual Threshing Machine Used in Demonstrations



Individual Threshing Machine Used in Demonstrations

Cost per ton	4.6c.
Distance to field	10 rods
Corn	Dry
Cut	1 in.

Queen Alexandria Sanitarium, London Township, Oct. 8th to 15th:

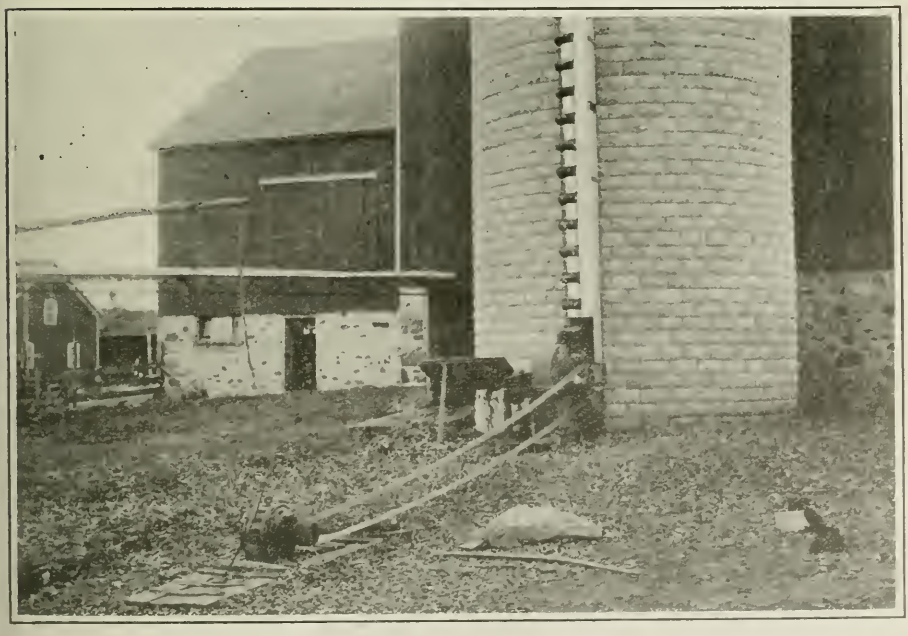
Type of Box	10 in. blower.
Size and shape of Silo	Round, 11¼ ft. by 29 ft.
Height to elevate	23 ft.
Detail of Labor—	
Two teams and drivers and two men	5 hours.
One team and driver and two men	40½ hours.
Run at intervals as loads came up.	
Amount put in	Full
Estimated weight	52.3 tons
Total kw-hr.	52.5
Total cost at 3c. per kw-hr.	$1.57½
Average h.p.	6.25
Kw-hr. per ton	1.
Cost per ton	3c.
Distance to field	20 rods
Corn	Very dry.
Cut	1 in.

George Raymond, North Oxford, Sept. 24th to Oct. 31st:

Type of Box	Fly wheel, with bucket elevator.
Size and shape of Silo	Round, 16 ft. by 42 ft.
Height to elevate	37½ ft.
Capacity	8444 cu. ft.
Detail of Labor—	
Four men at work using two teams, cutting part of the time and filling at intervals; several days were lost on account of trouble with corn binder and with the elevator.	
Amount put in	Full
Estimated weight	211 tons
Total kw-hr.	232
Total cost at 3c. per kw-hr.	$6.96
Minimum h.p. per 1 minute	2.68
Maximum h.p. for 1 minute	7.25
Kw-hr. per ton	1.1
Cost per ton	3.2c.
Distance to field by lanes	¾ mile.
Corn	Very dry most of time
Cut	½ in.

NOTE—This is an elevator outfit, buckets on a chain with a transfer carrier to pass the ensilage to the elevator hopper. It was not working well, especially the transfer conveyor, the material rubbing against the rim of the fly wheel, besides other mechanical defects as a result, the amount of power used per ton cut and elevated should be considerably less than is given in the foregoing table.

Blower Type of Ensilage Cutter



Elevator Type of Ensilage Cutter

D. W. Clark, West Oxford Township, Sept. 25th and 26th:

Type of box	Fly wheel with carriers
Size and shape of Silo	Round, 14 ft. by 30½ ft.
Height to elevate	21 ft.
Capacity	5388 cu. ft.
Details of Labor—	
Two teams and drivers and two men for two days	18½ hours.
Refill—1 team, himself and man	12 hours
Amount put in	Full
(20 loads put in later to refill)	
Estimated weight first fill and refill	100 tons
Total kw-hr. (fill and refill)	48
Total cost at 3c. per kw-hr.	$1.44
Average h.p.	5
Kw-hr. per ton	.48
Cost per ton	1.4c.
Distance to field	5 rods
Corn	Dry
Cut	1 in.

DEMONSTRATION FARMS

Results on the Demonstration Farms

In connection with the farms which are now being operated by Hydro-Electric power, it is of considerable interest to note how the farmers are actually using the power.

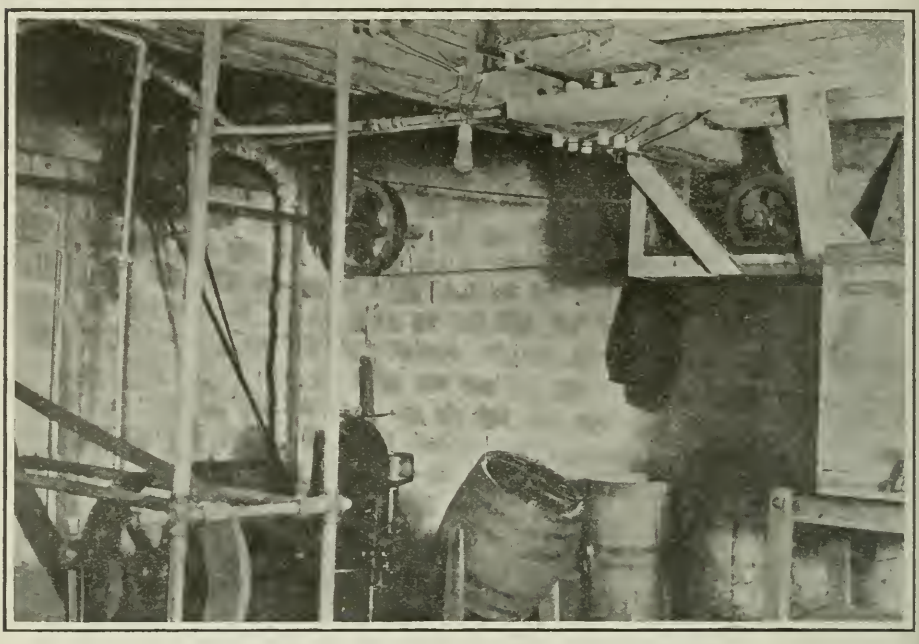
In the following tables, the detail of the work done, cost and cost per unit of work are given. It must be remembered, however, that some of these machines were not ready for the electric drive at the beginning of the year, as changes of this kind, on the farm, are made slowly.

Raymond & Son, North Oxford Township, Oct. 22nd, 1912, to Oct. 22nd, 1913

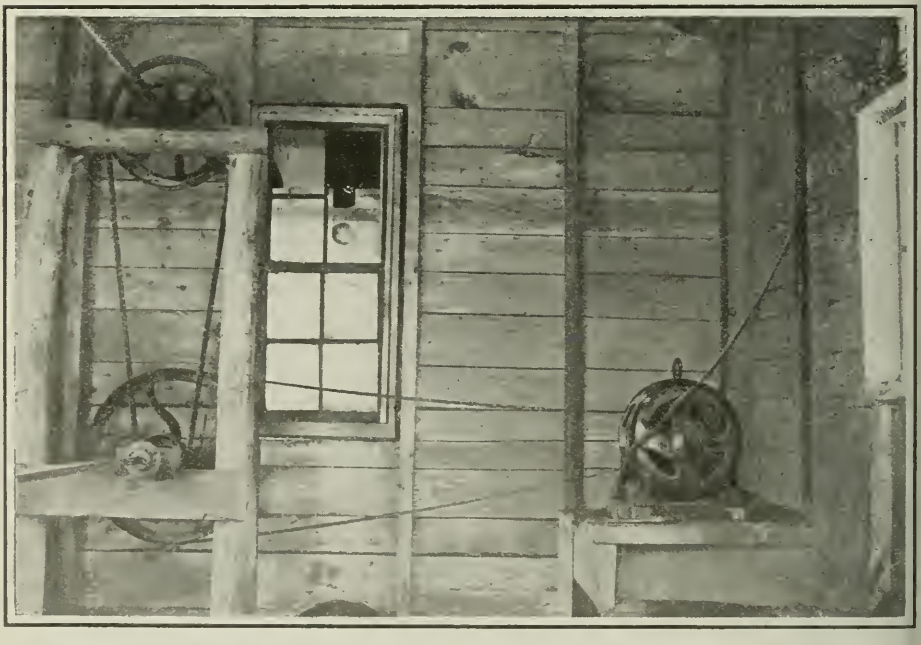
Work	Detail of work	% of Total Kw-hr	Cost	Cost per unit of work	Notes
			$ c.		
Grinding	500 bush. of oats	1.4	1 32	.26c. per bush.	
Milking	680 times Max. No. 30 cows. Min. No. 14 cows.	28.	26 93	.18c. per cow per milking.	
Fanning Mill	10 hours	.1	11	.91c. per hour.	
Pulping Roots	30 "	.7	70	.233c. per hr.	
Cutting dry corn	60 "	1.	95	.135c. per day.	
Heating water	325 times	3.7	3 52	.432c. per gal.	
Sawing wood by drag saw	20 hours	.4	35	1.75c. per hr.	
Air Heater	2,080 hours	35.5	33 86	1.62c. per hr.	
Toaster	91 times	.2	16	.176c. per time	
Electric Iron	84 hours	.8	74	.88c. per hr.	
Washing Machine	84 hours	1.2	1 18	1.42c. per hr.	
Lighting		27	25 84	1.84c. per kw-hr	
Threshing					Steam.
Silo filling	16 ft. by 42 ft. silo 211 tons (Estimated)		6 96	3.3c. per ton	Extra over contract

R. A. Penhale, North Yarmouth Township, March 16th to Oct. 18th, 1913

			$ c.		
Grinding	None				
Pumping water	4 hr. per day (6,125 bbl.)	28.3	17 75	.11c. per bbl.	
Milking	421 times—30 cows	23.7	14 98	.12c. per cow per milking.	
Separating cream while pumping	316 times	8.2	5 20	1.1c. per hour	
Heating water	1,210 hours 2,420 gallons.	29.	18 35	.7c. per gal.	
Lighting		10.8	6 74	2.74c. per kw-hr	
Sawing wood Threshing Silo Filling					By his steam engine.



Electrical Farm Equipment—E. Cohoon's, North Yarmouth



Motor Belted to Shaft for Driving Deep Well Pump

Alex. Anderson, South Yarmouth Township, Dec. 13th, 1912, to Nov. 13th, 1913

Work	Detail of work	% of Total Kw-hr	Cost	Cost per unit of work	Notes
			$ c.		
Grinding	2,800 bush. oats and and wheat, mixed.	45	39 60	1.41c. per bush.	
Milking	By machine, while testing it 14 times..	2.7	2 38	Testing Machine.	
Pumping	Using Jerker just put in	.9	79		Windmill, mostly Jerker, just put in,
Water Heater	680 hours				
	2,724 gallons,	19.7	17 34	.63c. per gal.	
Electric Iron	120 hours	2.9	2 55	2.1c. per hour	
Toaster	Not used				
Lighting		28	24 63	4.62c. per kw-hr.	
Sawing wood	8 hr.—25 cords stove wood	.8	71	.27c. per cord stove wood.	
Threshing and Silo Filling					By steam this year.

Ezekiel Cohoon, North Yarmouth Township, March 18th to Oct. 18th, 1913

Grinding	None				
Milking	30 cows 224 times.	11.7	7 37	5c. per cow per milking	
Heating water	3,000 gals	37.6	23 69	8c. per gal	
Separating cream	60 hours	1.4	0 88	1.45c. per hour	
Electric Iron	16 hours	.3	0 20	1.25c. per hour	
Pumping	856 hours	26.4	16 56	2c. per hour	
Lighting		22.6	14 25	2.15c. per kw-hr.	
Silo Filling / Threshing					By his steam engine.

Queen Alexandra Sanitarium Farm, London Township

Late in the year this farm was equipped as a demonstrating station as it is located near London, the centre of a large dairy district, where a great many farmers visiting the City could see it. The equipment consists of—

In the barn

A 7½ h.p. motor belted to a line shaft.
An individual threshing machine.
An ensilage and straw cutter.
A chopping mill and
A root pulper.

In the dairy

A cream separator belted to an individual motor.
A combination churn and butter-worker belted to a ½ h.p. motor.
A 20 gallon water heater.

In an annex to the laundry

A roller table wood saw.

In the Doctor's residence

An electric range.

In the basement of the Administration Building

A refrigerating and ice-making plant.

In the laundry

A complete water works system with a three-throw pump geared to 1½ h.p. motor, delivering water to a large steel pressure tank.

A 10 h.p. motor driving a counter shaft, to which is belted a large washing machine.

A centrifugal drying machine, and
A steamheated mangle.

Rural Distribution

The enterprise shown by farmers and residents in small villages has aided greatly our efforts during the past year to promote the use of electric light and power in the rural districts of Ontario.

A rural distribution system for the use of farms and small villages has been commenced in ten different townships. In some cases where they are of any size the business is handled by the Township. In other cases the nearest town handles the work until the system grows, when it is taken over by the Township. This arrangement has proved very satisfactory, since it enables a number of demonstration farms to be established in various parts of the country and gives the rest of the Township an opportunity of seeing electric light and power in operation on the farm. Much useful information has been gained on these farms for determining the most suitable installation of motors and machinery for the average farmer's use and in arriving at the proper system of charge for different kinds of service.

Electrical Equipment for the Farm

The usual installation recommended for the average farm house consists of a complete lighting system, using 25 watt and 40 watt lamps, a 500 watt flat iron and sometimes a vacuum cleaner and electric stove, while in the cow stable a row of lights behind the cows, about 1-20 c.p. lamp to every three cows, is usually recommended. Three or four 20 c.p. lamps are usually enough for the horse stable, while two in the hay mow, one in the silo, and one in the drive-shed are most frequently employed. This installation with a good 100 c.p. lamp on a pole in the yard gives ample lighting for the farm.

A 5 h.p. motor is also generally recommended for power purposes. This motor may be used in two ways with good results: either it can be fixed permanently in the barn and made to run a line of shafting, or it can be mounted on a truck and moved from place to place, arrangements being made at the pump, in the yard, and in the barn, to connect to the motor.

An accompanying illustration shows the motor installed permanently in the barn for driving a line of shafting and pulleys, which in turn drive a milking machine, cream separator, churn, threshing machine, grinder, straw cutter, ensilage cutter or root pulper separately.

Rural Rates

The question of rates in rural districts is influenced more or less by several considerations. In the first place the consumer is generally one who is unfamiliar with the use of electric power and it is desirable to give him a rate that he can readily understand; secondly, the load factor varies very considerably in different Townships, and lastly it is always necessary to make a certain fixed charge on each consumer to cover the annual charges on the invested capital in the Township.

From the point of view of simplicity to the consumer and to the Township in billing, etc., the flat rate has obvious advantages, but any form of limitator, fuse, or other device for keeping the consumer to his contracted load is more or less unsatisfactory, especially in districts where motors are used to any extent. A meter rate is difficult to determine in a large Township as the load factor over the whole Township is more or less unknown and the cost of reading meters over a large area involves considerable work for the Township officials, who, as a rule, have not the same facilities as Towns for carrying out work of this kind.

A method which has certain advantages is to give the rural consumer a flat rate and, on those farms where the connected load is considerably above the load contracted for, to install a two-rate meter which will register on one dial the total number of kilowatt hours used and on another the number of kilowatt hours used over and above the contract amount.

All the above methods are in use at present in one or other of the Townships served and in many places an alternative meter rate or flat rate is allowed.

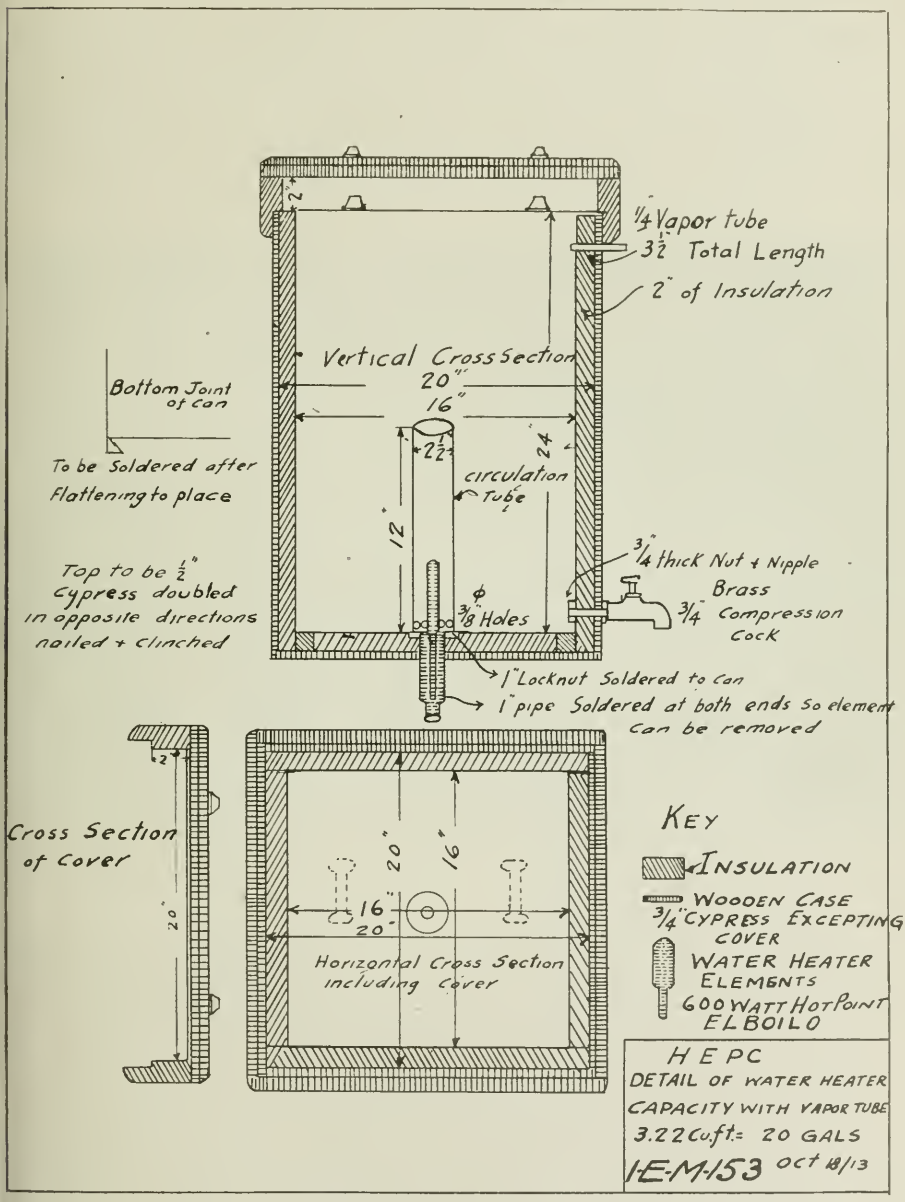
The results are being watched carefully in these Townships and, from the data obtained, a standard schedule of rates for rural distribution will shortly be compiled.

RURAL POWER RATES

Name of township	Fixed service charged per annum	Meter rate per Kw-hr	Alternative flat rate per h.p. year	Miles of line built	No. of contracts connected	Sgd, contracts not yet connected	Miles of distribution proposed or under construction	Remarks
	$ c.		$ c.					
Toronto	24 00	.....	36 00	11	72	132	19	Additional miles under construction.
West Oxford...	36 00	.....	30 00	5.5	11	4		
Waterloo	24 00	5c. 10% prompt payment.	30 00	7	.....	12 Village of Breslau.	10	These consumers will be connected at once, also 2 factories.
North Norwich.	24 00	4c	36 00	4	9	1	12	Township to be canvassed.
North Yarmouth	36 00	.....	35 00	2.7	10	1		
South Yarmouth	24 00	.....	36 00	.5	3			
North Oxford..	24 00	.....	36 00	.75	1	2		
Downie.....	24 00	5c	30 00	.....	Village of Sebringville.	.....	20	Township to be canvassed.
Grantham	24 00	4½c. 10% prompt payment.	22 00	.....	.....	75	21	Twp. now being canvassed.
Wilmot	$1 per h.p. per month.	Power 5.1, 3.4, 0.4c Com. Lt. 12 & 6c., Dom. Lt. 4 & 6c.	.....	6	Village Petersburg Village, St. Agatha.	6	7	

From the above table it will be seen that the rural lines serve a number of farms in various Townships and in addition to these the villages of Clarkson, Cooksville, Dixie, St. Agatha, Petersburg, Sebringville and Breslau.

In every case before building lines in rural districts, contracts must first be signed by consumers with their respective Townships and the lines are built only when there are sufficient consumers to make it pay. This accounts for the number of consumers shown in the schedule as signed but not connected.

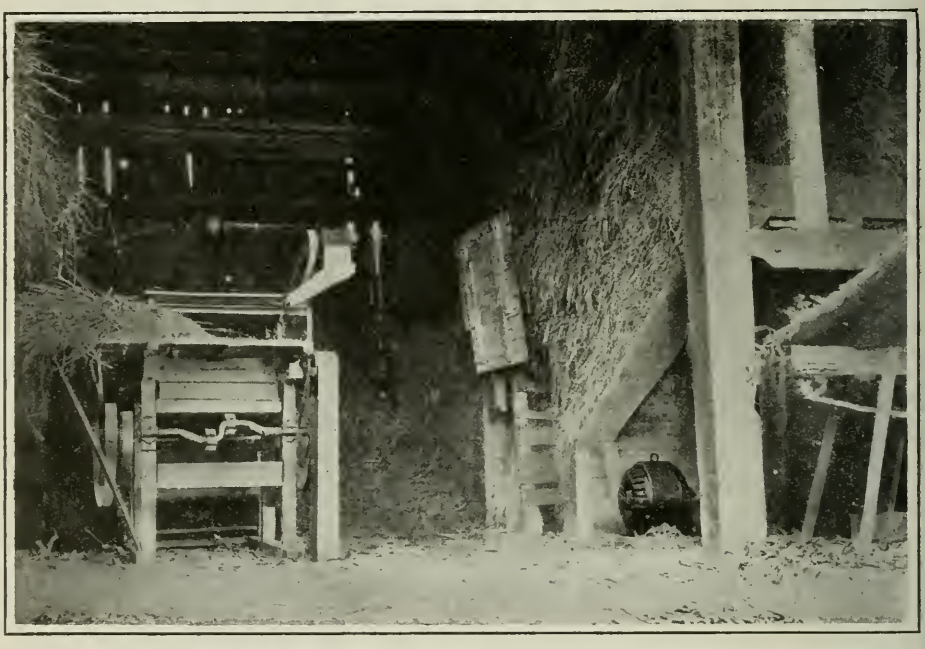


Detail, Electric Water Heater.

Lighting the Roads

There has always been a very general demand for some form of road lighting in the rural districts, and although it is not necessary to have as much illumination as in towns and cities, lights are sometimes required along the roads and at such places as railway crossings, bridges, culverts, grades, etc.

In those districts where cost is of primary importance it is usual to install one 100 watt lamp outside the gate of each farmer who is being served with power. This light is placed directly under the cross arm and is controlled by a switch near the front door of the farmhouse, while in districts where a more complete lighting system is required, it is usual to install a series lighting system with 100 watt lamps and radial wave reflectors every 1,000 feet.



Electrical Farm Installation—D. W. Clark, West Oxford

Estimates are now being prepared for a series street lighting system along the main roads of Toronto Township and in North Norwich Township, the plan of placing lamps outside each farmer's gate is being adopted with good success.

Special Equipment

A most important part of the electrical equipment on the farm, namely, a water heater, is shown in an accompanying illustration. This heater consists of a galvanized iron tank, capable of holding about 20 gallons of water, surrounded by insulating material and a wooden casing to reduce the heat losses. A 600 watt heating unit is put into the bottom inside of the tank. Most of the farmers are purchasing their current on a flat rate, so that this heater provides a good use for their available current at night. On going to bed the farmer starts the heater and in the morning has a good supply of boiling water in the milk house for washing the milk pails, cream separator parts and milking machine parts as

well as for making bran mash or other mixtures for a sick animal. This has been found one of the most useful applications on the farm as the milk inspectors insist on thorough cleanliness in the dairy.

Methods of Filling Silo

Filling silo has always been regarded as one of the heaviest pieces of work on the farm and in most cases it is done in a most uneconomical manner as far as the power is concerned, as the blower boxes generally in use are most inefficient. A careful comparison between four methods of silo filling is made in the following table:—

COMPARISON OF VARIOUS METHODS OF FILLING SILO

Data.	With a large Blower Cutting Box and 25 h.p. Motor. No. 1	With 10-in. Blower Cutting Box and 5 h.p. Motor. No. 2	With Fly Wheel Box and Carriers, set inside barn, 5 h.p. Motor. No. 3	With Bucket Type Carriers and 5 h.p. Motor. No. 4
Size of Silo	14 ft. by 35 ft.	14 ft. by 35 ft.	14 ft. by 30½ ft	16 ft. by 42 ft.
Quantity put in	108 tons	89 tons	100 tons	211 tons
Total time	11 hr. 10 min.	36 hr. 55 min.	12 hr. 50 min.	69 hr.
Kw-hr	215	191	48	232
Average h.p.	25.8 h.p.	6.92 h.p.	5 h.p.	4.5 h.p.
No. of ft. tons	3,780	3,115	3,050	8,862
Kw-hr. per ft. tons	.057	.061	.015	.026
Cents per ft. ton	.285	.305	.075	.130
Total cost of labor	$38.50	$66.60	$28.00	$82.80
Labor cost per ft. ton	1.02c.	2.14c.	.92c.	.935c.
Total cost per ft ton	1.305c.	2.445c.	.995c.	1.065c.

UNDERGROUND CONSTRUCTION

Brantford

At the request of the Brantford Hydro-Electric System an estimate was prepared and recommendations were made in connection with the installation of an ornamental street lighting system in the down town district.

The work is now under way. The lamps are 6.6 ampere direct current magnetite arcs mounted on cast iron standards and are fed by a lead covered, steel tape armored cable, laid in the ground. It is expected that the lamps will be in operation before February 1st, 1914.

Chatham

An estimate was made for an underground conduit system in the business district on King Street, from 3rd Street to William Street. Provision was made for feeding by underground cables the ornamental street lights as well as the buildings on this street.

The work will probably be installed in the summer of 1914.

Galt

In June, 1913, an inspection was made of an ornamental lighting system which was being installed by the municipality in the residential district. A total of 148 single light standards with 100 watt tungsten lamps were erected on Brant Road, Wentworth and Lansdowne Avenues and neighboring streets. The work was done as a Local Improvement.

Estimates were made for an underground conduit system proposed in conjunction with an installation of ornamental street lights in the commercial district and recommendations in regard thereto forwarded to the local Hydro-Electric Commission.

Goderich

Around Court House Square 32 ornamental standards with tungsten lamps were erected, 16 of these being 3 light and the remainder single light standards. Paper insulated, lead covered steel tape armored cable was laid in the macadam roadway to feed these lights.

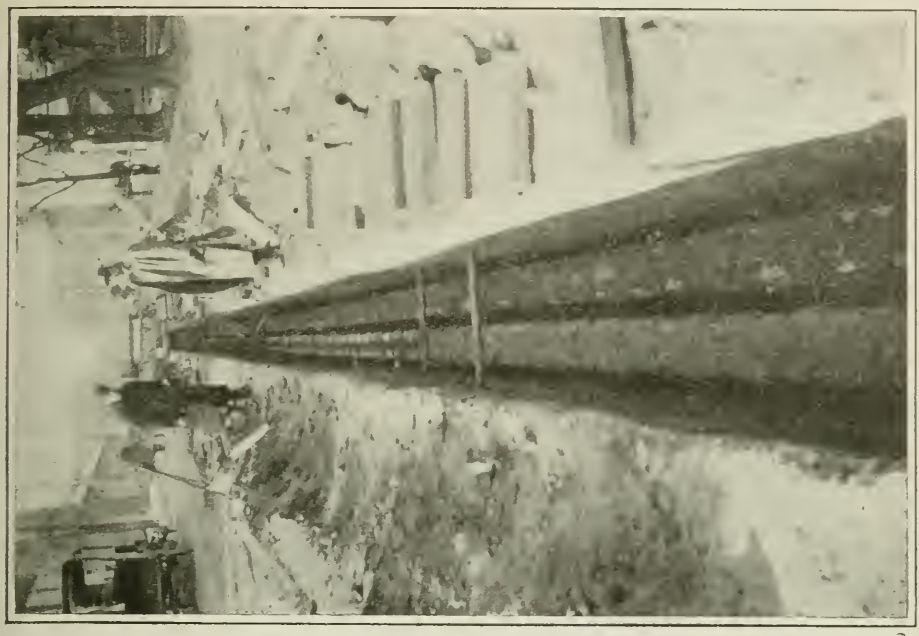
An underground service was also installed to the Court House, so that the Square is now free from overhead lines.

This work was completed in October, 1913.

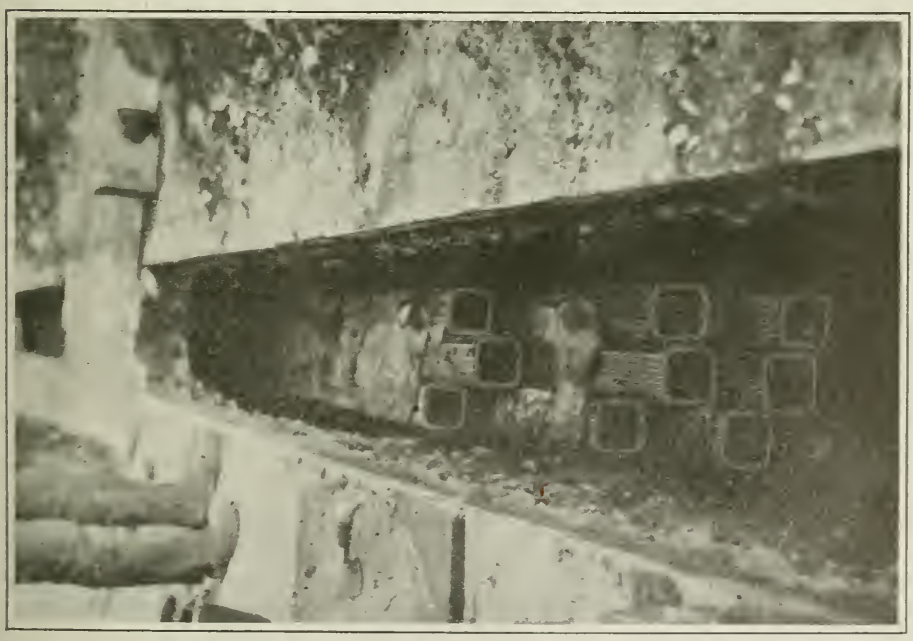
Hamilton

In pursuance of the Hydro-Electric Power Commission's order, dated Nov. 24th, 1912, providing for the removal of overhead lines from certain streets in Hamilton, and the installation of underground conduits for the use of various companies concerned, plans and specifications for a Joint Conduit System were drawn up.

After the approval of these plans by the Commission, tenders were invited for the construction of the conduit system and these were opened on August 27th, 1913. The work contemplated included the installation of between 650,000 and 700,000 duct feet of conduit with manholes, service boxes and other appurtenances.



Underground Conduit, Vine St., Hamilton



& Duct Run on Wellington St., Kingston

The contract for this work was awarded to the G. M. Gest Company, of Montreal, at an estimated cost of $177,822.95, this tender being the lowest.

Actual construction work was commenced on Sept. 12th, 1913, and to date, Oct. 31st, the following has been completed:—

245,500 duct feet of conduit.
32 manholes.
29 service boxes.

This system is notable in that the duct runs of the two electric light companies and two telegraph companies are laid in a common trench as a unit structure, being separated, however, from one another by concrete walls.

There are three sets of manholes which are quite separate from one another and have separate entrances from the street surface.

The telegraph companies occupy the same manholes jointly, which are separated from those of the electric light companies, which, again, are separate from one another. This arrangement was found to be somewhat complicated and at some locations difficult to carry out on account of the congestion beneath the roadway of various gas, water and other mains. The results, however, are highly satisfactory and fully justify the precautions taken to isolate the various cable systems.

It is expected that all the conduit laying covered by the order of the Commission will be completed in the early part of 1914.

The whole installation is subject to the regulations and approval of the Hydro-Electric Power Commission and our engineers have been constantly in touch with the work.

Kingston

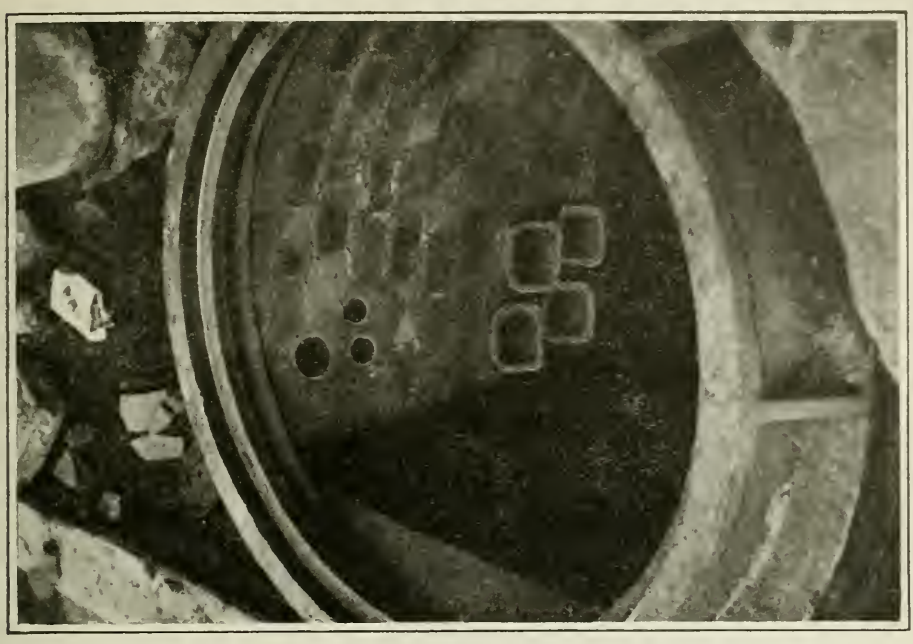
On April 23rd a preliminary layout for an underground conduit system and an ornamental street lighting system for the commercial district was forwarded to the municipality, the total cost of same being estimated at $34,000.

During the first week in June, a by-law was submitted to the people for approval of the expenditure of the above sum for the purpose stated. This by-law was passed by a large majority. In August, detailed plans and specifications were drawn up for the supply and installation of conduit, lead covered cables, combination street railway and lighting tubular steel poles, cast iron lighting standards and ornamental lamps.

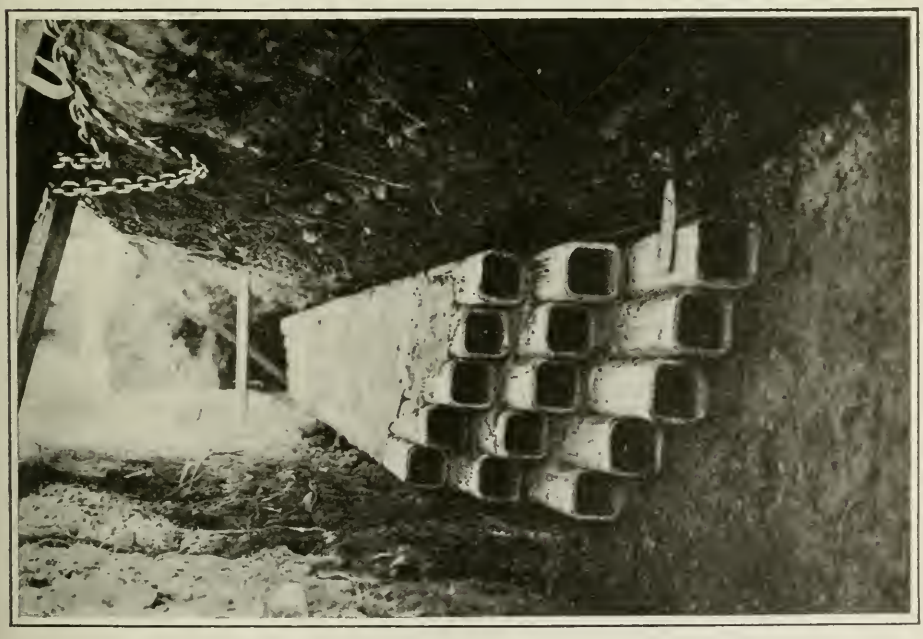
On Sept. 19th, tenders were received for the supply of conduit and the installation of the conduit system. The contract for installation was awarded to "Dietrich Limited," of Montreal, on a unit price basis for duct runs, manholes, service boxes, services to buildings, etc. The estimated cost at the prices submitted being $11,887.00.

The contract for the supply of 3½ inch square bore single duct conduit was awarded to the same firm at a price of 6 cents per foot for 23,000 feet. This duct was manufactured by the Clermont Sewer Pipe Company, of New York.

Construction work was commenced on Oct. 8th, under the supervision of the Commission's engineers. On Oct. 21st, a request was received from the municipality for an estimate covering an extension of the underground system on streets not included in the original plans. The cost of additional work was estimated at $25,000.



Service Box on Bagot St., Kingston



Underground Conduit leading out of Paris Station

On Oct. 28th, the City Council decided to proceed with the additional work. Good progress is now being made and the conduit system will be completed before the end of the year. The ornamental street lights will be in operation about April 1st, 1914.

Paris

In connection with the alterations being made in the municipal substation, it was decided to lay an underground duct run from the switchboard to the 4-pole structure some 200 feet in the rear of the substation.

These ducts will contain the feeders for the distribution system and the overhead lines will be terminated on the pole structure.

The above work is now under way. Plans for the ornamental lighting on Grand River Street have been prepared and the installation of the same will be made in 1914.

Peterboro

Investigation was made in May, 1913, to determine what underground work it would be advisable to install in connection with the proposed ornamental street lighting system on George, Hunter and Charlotte Streets. It was found that the commercial secondary wires could be run on wooden poles in alleys at the rear of the buildings, thus avoiding the expense of underground ducts and cables for this purpose on the main streets.

Steel tape armored cable was laid in the roadway to feed the series ornamental magnetite arcs. This cable was installed during July and August, 1913, and will be in operation before the end of the year.

St. Catharines

Estimates were made for the installation of an underground conduit system on St. Paul Street from Ontario Street to Geneva Street. The cables in this system will feed both the commercial and street lighting. The cluster lights will be re-arranged and the above work installed in 1914.

Welland

Paper insulated cable of Submarine Type and cable terminals were supplied to this municipality for carrying power under the Welland Canal.

Windsor

An investigation was made during June, 1913, into the requirements of the business district for underground conduit construction. It was found that practically all streets were paralleled by lanes which were well suited to the locating of poles and wires therein.

It was decided, therefore, to lay armored cable to feed the street lamps and to carry the other circuits on the poles in the lanes.

An ornamental street lighting system is to be installed on the Local Improvement plan and estimates were prepared of the cost of several alternative propositions. This work will be commenced as soon as the type of lighting is decided upon and the petitions therefor signed.

ELECTRIC RAILWAY PROJECTS

During the last session of the Legislature, a bill was presented by the Hon. Adam Beck, authorizing the construction and operation of electric railways by groups of Municipalities. The bill, as given under the legal section of this report, was duly passed in April, 1913, and it was at once evident that many Municipalities would avail themselves of the authority given under the Act to improve the transportation facilities of their districts.

The steam railways throughout the Province, supplemented by a few interurban lines, are taking care of the traffic requirements on the through routes in a fairly satisfactory manner, but the accommodation given on the branch lines, where there are no electric roads to assist, is not all that it should be. Towns and cites located on these branch lines are small and scattered, but the rural sections are comparatively well settled by an industrious and fairly well off population. The lack of conveniences, the chief of which is railway service, has resulted in a decrease in population in these districts, and, unless these matters are attended to, a further decrease is bound to occur. A steam railway is inherently handicapped in serving a rural population, as stations and stops are so far apart that intending passengers are forced to drive many miles, often times parallel to the tracks, to reach them. With such conditions existing, the rides per capita are few and the train service very infrequent, which results in the railways being blamed for the decrease in population, when the real reason lies in the type of motive power used. Short interurban electric lines would not be paying investments in many of these districts, as the population is not sufficiently dense to supply the necessary passenger service and very little freight business could be obtained.

As provided for in the Act, the Commision is required to investigate and report on electric railway projects on the receipt of proper resolutions from the Municipalities interested, and, a number of requests having been received and sanctioned, the Railway Division of the Engineering Department was formed to carry on this work.

It was first necessary to examine into the local conditions of population and customs in the several districts for the purpose of comparing proposed lines with roads that have been operating for some years. Statistics and information from existing lines were then collected, and general standards selected for use in estimating the capital cost and operating expenses.

The usual interurban road in the States obtains most of its revenue from passenger traffic between large centres but, as few large towns and cities are found in Ontario, it must be expected that the business obtained by our proposed lines will be of a different nature. It was possible, however, to obtain much useful data by studying the returns of various lines in that country.

Some countries in Europe have developed systems of interurban railways with very satisfactory results, but, conditions existing there as regards manners and customs of the people, cost of construction, material and labor, etc., are so radically different from those encountered in this Province, that it is difficult to procure suitable comparisons.

The State of Belgium has had a system of public owned railways in operation for a number of years, and the report of the Board of Management as presented for the work in hand last year, gives the following information:—

Lines in operation approximately	2,500 miles
Lines under construction approximately.	400 miles
Lines under study	1,000 miles
Capital cost of lines in operation or under construction approximately	$70,028,800.00

These lines are built by funds raised by the State, Provinces and Municipalities.

Since April last, when the Act above referred to was passed, requests for reports and estimates on some 500 miles of line has been received from various sections of the province. Those on which work has been done are given herewith.

Toronto—North-Eastern District

In answer to a request in the form of resolutions from a large number of municipalities in this district, a survey party was placed in the field, and after preliminary information had been obtained, a tentative report was prepared and submitted to the representatives on the 8th of October.

This report, which has been printed and is available for distribution, considers the construction of five different schemes varying in length from 16 to 71 miles, and requiring a capital expenditure, without provision of a subsidy from the Dominion Government, of $797,003 to $2,932,276. Operating revenues were estimated from $137,500 to $450,500, and operating expenses from $152,600 to $396,660.

The delegates, at a later meeting on the 29th of October, accepted the report in full, and asked the Commission to at once prepare a form of agreement to be entered into by the Municipalities. At this time the surveys are being completed, and the Commission expects to be able to present a final report within a few months.

Barry District

During the summer, a resolution of the Council of the town of Barry was received, asking for a report and estimate on an electric line from that town to make connections with the Canadian Pacific Railway.

It was suggested that this proposed line be run in a northerly direction, which would require some 15 or 20 miles of line. However, it was found on inspection that an exceptionally good route could be secured in a westerly direction, that would only require some 8 miles of line to give the desired connection.

A preliminary survey was made of this route, and a line projected and estimated upon from the data collected in the field. It now remains to secure the estimated traffic and prepare a report to be submitted to the town.

Huron County

The town of Goderich forwarded a resolution of their Council towards the end of September, 1913, asking for a report on an extensive net work of radial lines throughout Huron County. A survey party was immediately placed in the field, and preliminary lines are now being run for the purpose of preparing estimates on the cost of construction. This work will be completed before the severe winter weather sets in, and will allow a report to be forwarded to the Municipalities interested before spring.

TORONTO LABORATORY AND STOREHOUSE

During the early months of the year there was completed on Strachan Avenue the building designed to accommodate the departments engaged in experimental and testing work, and also to provide storage for the large amount of line hardware which the Commission has found necessary to stock, not only for itself, but for the Municipalities taking advantage of the benefits of co-operative purchasing. The plans provided for a building 110 feet by 70 feet, of three stories and basement. Approximately one third of the area was to be devoted to Laboratory work, and the remainder of the building used for the storage of the large quantities of construction material, lamps, meters, and other incidental supplies.

Toronto Laboratory and Storehouse

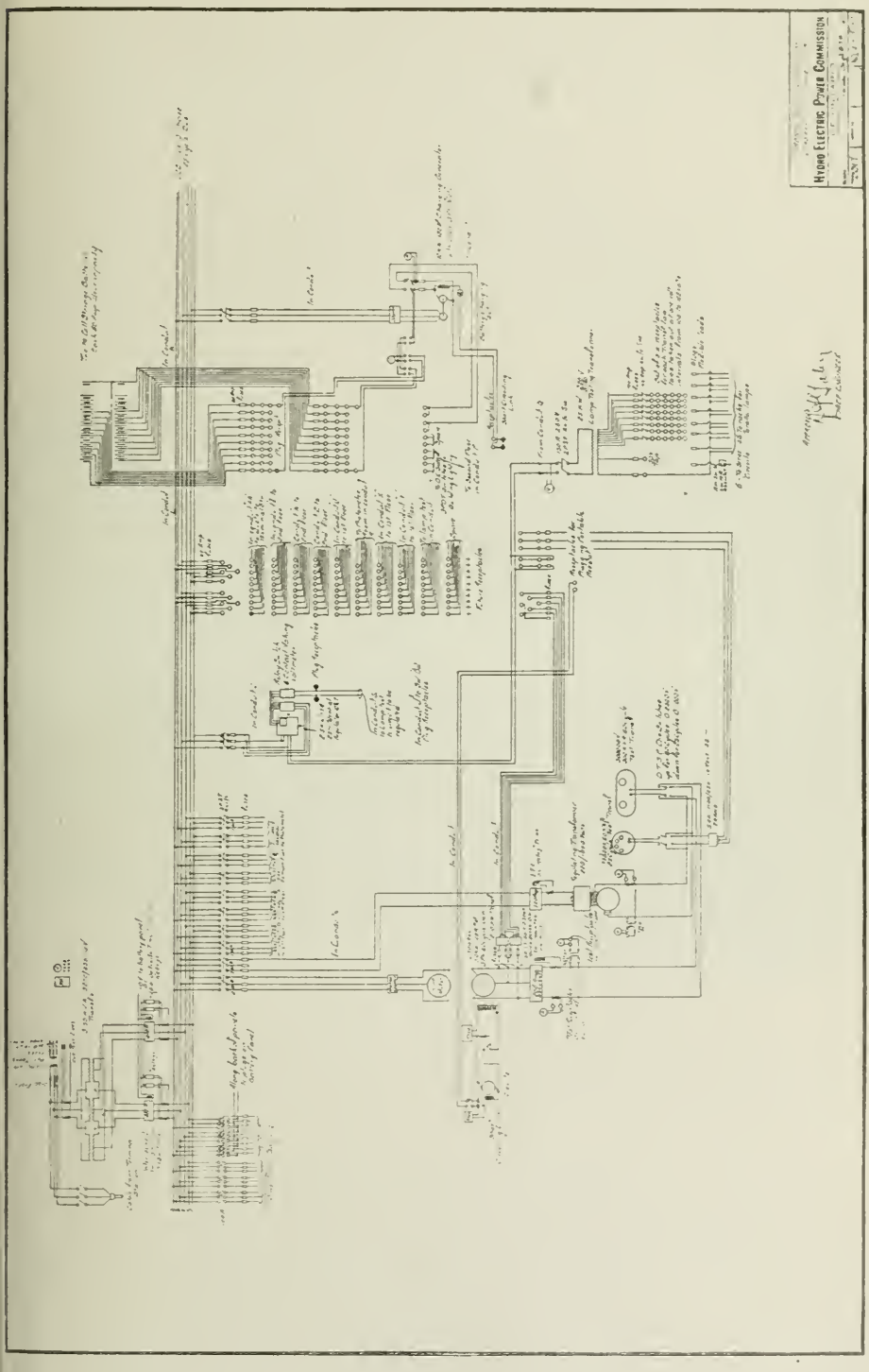
Storehouse

In May, the storage of materials commenced in the new building, and supplies which formerly had been widely scattered, became centralized in Toronto. The hardware kept in stock varies from 20 in. Machine Bolts and 30 in. Crossarm Braces to 2-318 in. Carriage Bolts and 11-16 in. Washers, and an average stock of some sixty thousand lamps of all sizes is maintained. The Exhibition siding is close by the building, and arrangements are being made to have this extended to the shipping platform of the Storehouse, in order that car-load lots may be handled more expeditiously.

Since the active operation of the Storehouse Department commenced, a rapidly increasing business has been done for the Municipalities, the low prices which are obtained by the Commission on the large quantities of material ordered, and the immediate delivery that can be effected from the large stocks maintained, being points of unquestionable benefit to the customer, and ones not to be neglected.

Corner of Shipping Room

Section of Lamp Stock



Wiring Diagram of Laboratory

The value of the storehouse as an organization is very largely increased by the inclusion in the same building of the testing laboratories. Material to be bought according to Commission's specifications can thus be fully proved before being accepted and placed in stock. The defects of old patterns can be investigated and recommendations submitted, and new types of hardware may be designed.

Laboratory

Separated from the stores proper by a dividing wall, is the section of the building where are located the departments engaged in testing and research work. These include High Tension and General Testing, Standards and Meter, Lamp and Illuminating Engineering, and Laboratory Workshop. The work carried on in these Departments will be taken up later on in this report.

Standards and Meter Department

The general electrical equipment of the Laboratory, owing to the wide range of testing carried on, necessitated a great deal of forethought and the exercise of considerable ingenuity.

Standards and Meter Department

With the continued increase in the amount of power handled and sold, the problem of providing suitable means of measuring this energy becomes one of great importance. The most commonly used method of metering power sold in small blocks, is by use of the watt-hour meter, which gives on its dials a record of the product of power by the time during which it was used, but for special purpose and usually for large blocks of power, a number of other types of measuring apparatus, such as graphic meters and demand indicators, are in use

and for very small users a number of current limiters have appeared on the market.

Before the commission can approve any of these types of apparatus for use by its customers, the instrument must prove its efficiency for the work which it will be called upon to perform. With this object in view, the Meter Testing Department was organized and equipped. This work was formerly carried on in a temporary laboratory located in Toronto Station, where sufficient apparatus was installed to run tests of comparison, and to obtain characteristic curves on watt-hour and other meters. But as lack of room of precise standards, and of steady sources of voltage were detrimental to the high class of work necessary, space was allotted and suitable apparatus selected to install and equip a first-class standardization laboratory and meter workshop in the Commission's new store-house on Strachan Avenue.

The large number of types of meters tested in the old laboratory being of Canadian, American, British and Continental manufacture, presented widely different characteristics, both electrical and mechanical, and the necessity soon became evident of obtaining a common basis of comparison, as well as definite rules for acceptance or rejection of various types. These rules must be sufficiently flexible to include all classes submitted, and yet rigid enough to eliminate those meters which would not prove a good investment.

With this object in view, information was gathered from every accessible source on both sides of the Atlantic as to methods and rules for obtaining the true values of meter types, and on this as a basis was drawn up a "Meter Code" for the acceptance and comparison of alternating current watt-hour meters. As direct current plays a relatively unimportant part in the Commission's scheme of distribution, these tests were made applicable to alternating current meters only.

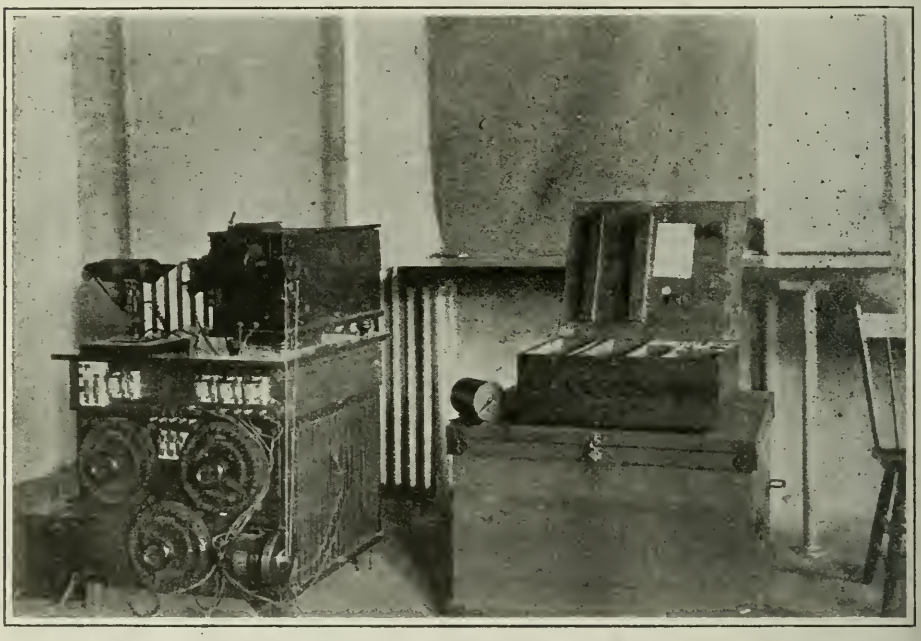
The equipment of the new laboratory is being selected and installed with the end in view that all the conditions of the tests may be complied with, and that they may be run in proper sequence. Meanwhile this department has been continuing its tests and investigations on watt-hour meters and other power measuring devices, until a position has been attained where excellent information as to the comparative values of a large number of meters is now within reach of its customers; and this will be more fully gone into and further verified when, with improved equipment, the new rules are applied. For medium sized loads, the maximum-demand meter finds a growing field, and several different makes have been tested—generally with favourable results. Graphic meters are usually considered too expensive to install and operate on any but comparatively large loads, though when properly adjusted and cared for, they furnish the ideal in commercial electrical measurement. The Meter Department is prepared to conduct the fullest tests and to make any repairs on graphic instruments.

Being equipped with a first-class oscillograph put up in a readily portable form, the Commission is able to make detailed investigations of matters affecting the wave form of current at any point on the system. This Department has from time to time done such work in this direction as has enabled the Commission's Engineers to locate, and take steps resulting in the ultimate removal of, a number of disturbing factors in the distribution system.

Under the direction of this Department, there has already been constructed a number of special devices necessary for convenient and accurate testing, and the following description of some of them may prove interesting.

For obtaining currents of varying factors, an adjustable choke coil was built. This consists of a small auto-transformer in which the magnetic circuit may be opened to any desired degree by means of a fine threaded screw operated from outside the case. In addition to this outfit, there has been assembled a phase angle board, wherein, by a combination of transformers operating on a three-phase source of potential, voltages may be obtained which are separated from each other by any desired time angle. This may also be used for producing potentials of different value required in many tests.

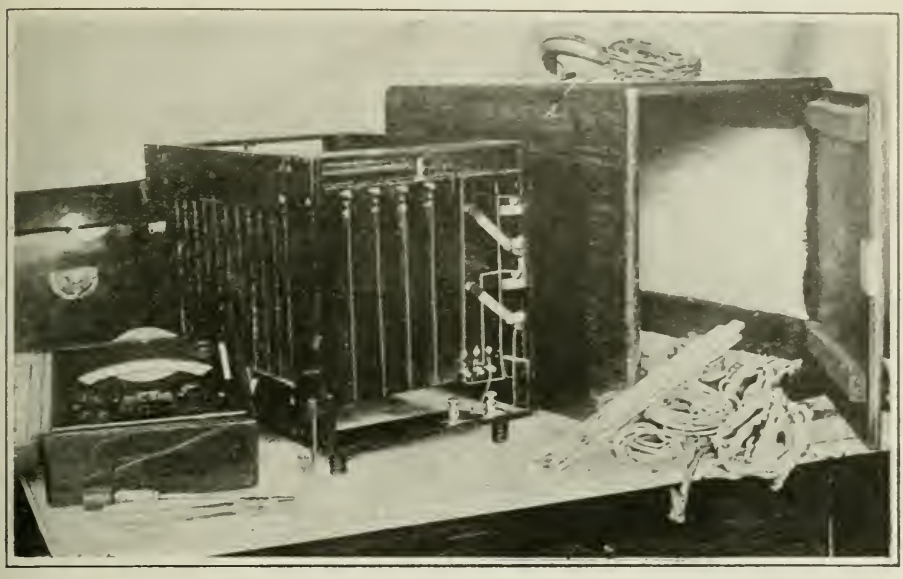
For the new meter workshop, a Rivett precision lathe has been purchased, and this in conjunction with other apparatus and equipment selected specially for this class of work, will enable the Meter Department to do the most delicate instrument work required. The Department will then take over the meter repair for



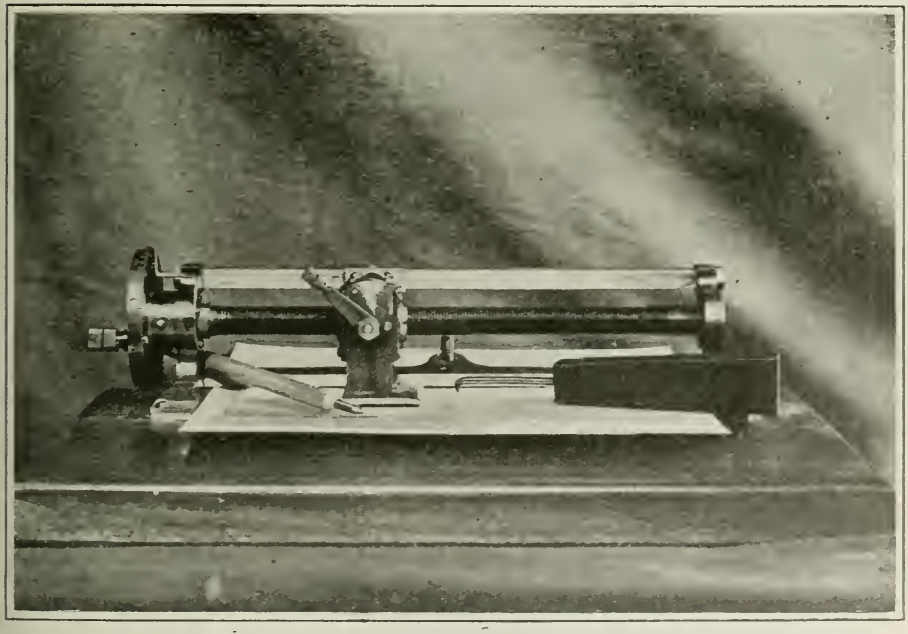
Oscillograph with its Table and Shipping Box

the entire system, and will be able to construct special devices for convenience and accuracy of making measurements, either in the laboratory or out of it. There is at present being designed specially for the use of the Commission, a Precision Watt-hour Meter, which shall be entirely free from the various sources of error inherent to the ordinary types of integrating instruments, both direct and alternating. In connection with this there will also be constructed a device for accurately counting the revolutions of meters under test, thus eliminating all possibility of personal error.

In conclusion, and as an indication of the impotance of the work undertaken by this Department to promote the highest possible degree of accuracy, it may be noted that many meter departments content themselves with an accuracy of 2 per cent. This, though amounting to little in the case of one individual meter,



Baker Potential Ratiometer



Dividing Engine

might, if allowed on the amount of power handled by the Commission, total to thousands of dollars in a year. Aside from the numerous other duties undertaken by this Department, the desirability of removing every possible source of error in the measurement of the power handled is in itself sufficient justification for the organization and equipping of the Hydro-Electric Power Commission's Meter and Standards Laboratory.

Illuminating Engineering

The improved methods of light distribution are no less noticeable than the rapid developments of light production, and that this is largely in the public mind is exemplified by the general insistence on high intensities and more artistic systems in street lighting. Considerable work has been done by the Commission towards taking data on all kinds of street lighting apparatus, and thus to be placed in a position where reliable advice and information might be given to Municipalities on lighting systems for their streets.

During the past summer, several Municipalities were visited, and photographs and measurements of their street lighting taken. The information which has been collected during the past two years has enabled the Commission to get accurate data, both as to the artistic value of the particular type of apparatus represented, and also the resultant illumination derived from same, including such details as the Watts per Linear and Square Foot: the average Illumination; the Maximum and Minimum Illumination; and all the features which it is necessary to consider when planning street lighting systems

Considerable work has been done in the Laboratory of the Commission toward obtaining information on the different types of fixtures on the market designed for street lighting service. Among the different points determined. were the distribution obtained by the reflector; the absorption of the reflecting or diffusing medium; the mechanical strength or resistance to the wear and tear of service; the insulation (an important item for series fixtures) and the general suitability for service, taking into consideration the price.

The losses through absorption by dirt on reflectors or diffusing glassware, have been investigated, and information will shortly be available for Municipalities, showing the allowable length of time between the cleansing of reflectors or glassware under different conditions of street lighting service, this period being when the cost of cleaning balances up with the monetary loss due to absorption by dirt of the light generated.

Realising that the detrimental effect of glare from unshaded light sources is more noticeable in street lighting systems than in the illumination of interiors, the Commission is experimenting towards the development of a fixture which will give such a distribution of light intensity from the incandescent lamp as source, as to approximate even illumination with a ratio of spacing to height of about 4 to 1, and yet so shield the bare lamp from the range of vision that at no time should glare present itself, and thus lower the visual acuity.

Rural road lighting being a matter of growing importance, experiments are under way to develop a type of reflector peculiarly suitable for an installation of this character. It may be understood that in sparsely populated districts it is not practicable to attempt even illumination, owing to the high cost of installation which this would entail. A fixture every four or five hundred feet would probably

Method of Obtaining Distribution Measurements

A Well Illuminated Street

be the commercial limit. It is believed that the highest efficiency will be obtained with; (firstly) an asymmetrical type of reflector, confining the resultant illumination to the road proper; (secondly) a reflector having sufficient depth to totally shade the bare filament from the observer when approximately distant fifty feet from the standard; the height of the fixture being somewhere between 16 and 20 feet. The comparatively brightly illuminated area extending on either side of the fixture for 100 feet or more, presents a suitable background against which objects are silhouetted, whilst the absence of glare permits full advantage to be taken of this phenomenon.

Many points with reference to street lighting systems have been discussed with the Municipalities, and recommendations made. Fixtures have been designed and suggestions made as to preferable types in new installations.

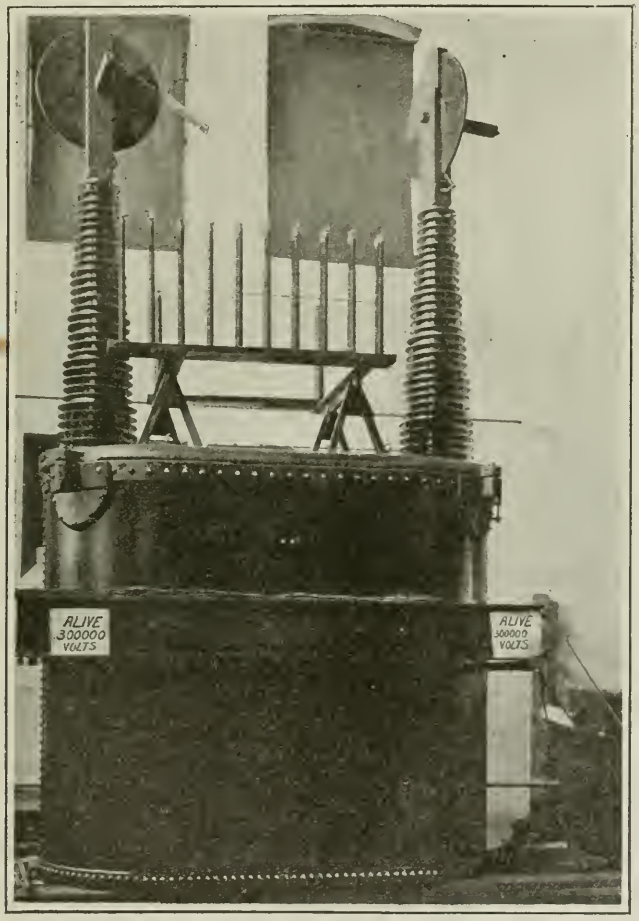
It has been a difficult matter to impress the Municipalities with the fact that satisfactory illumination cannot be obtained where the ratio of spacing to height exceeds five or six to one—in other words, where poles are spaced one hundred feet, the height of the lighting fixture must approximate 15 to 17 feet. It has also been found that the tendency among municipal authorities is to lay far too much stress on the location of the fixture on the pole, so as to present a symmetrical appearance by day, rather than considering the effect of low-hung light sources by night, which results in a widely varying intensity of illumination and a glare which is much in evidence. The five-lamp cluster has continued to prove popular though recommendations have been made by the Commission against using a multiplicity of units where one lamp will accomplish the same purpose.

The pendant one-lamp standard of the "bishop's crook" type, presents several advantages, and this type has been usually adopted in continental cities. The use of a reflector is made possible where the lamp is held pendant, and as it is only in the very large cities that the buildings can bear inspection above their display windows, this type is peculiarly suitable. The "Magnetite" Arc is a strong contender against the tungsten lamp where display lighting is desired. However, the advent of the high-efficiency tungsten lamp, giving a normal life of 1,000 hours when burning at an efficiency of one half watt per candle, will place the incandescent metal filament lamp in a very strong position for both interior and exterior lighting. It is expected that this new type of lamp will be on the market within a few months, though only in lamps of a comparatively heavy amperage.

High Tension and General Testing Department

This section of the Laboratory is at present equipped with a 300-kv.a., 300,000 volt, 60 cycle transformer and a 50 kv-a., 37,500/75,000 volt, 25 cycle transformer. The former has at present a combination of generator and primary resistance control, and the latter is controlled by means of a 220 volt-1,100 volt multitop transformer or potential regulator. These potentials are used in determining the breakdown voltage by flashover or puncture of which may be submitted for test. High potential tests may also be carried out under artificial rain conditions, by means of a nozzle apparatus, which may be various types of insulators, street series lighting fixtures and other apparatus so directed as to precipitate the imitation rain at

any desired angle. During the last four months, detailed investigations have been carried on in connection with the insulator troubles that were experienced on the Commission's high-tension line. Hundreds of insulators have been tested to determine to what extent the insulating qualities are affected when they are subjected to various conditions similar to but more severe than obtain in service, such as temperatures up to 100 deg. cent., unequal heating, sudden cooling and electrical



300,000 Volt Test Transformer

and mechanical stress. In many cases, the original designs of insulators have been modified to better conform to service conditions, as indicated by the test results.

Tests on oil used in transformers and switches are carried out for Municipalities, and the sub-stations of the Commission. The current for the oil-testing apparatus is supplied by the 25-cycle, 37500/75000 volt transformer. The potential across the gap being controlled by a multiple tap regulator on the low side of the testing transformer. Samples of oil are periodically received from the various

stations, and on completion of tests, containers are returned to sender with report of tests.

Apparatus for obtaining and measuring tensile strength of insulators, insulator pins, cable, cable clamps and sleeves, etc., up to a maximum of 10,000 lb. is installed. And complete apparatus for testing cements is being installed.

In general, it may be said that electrical and mechanical tests on line apparatus may be made in practically any desired manner, special apparatus being manufactured by the Laboratory workshops to meet any special conditions that may arise.

Lamp Testing Department

Lamp investigations have been conducted in this department throughout the past year, and the scope of the Lamp Laboratory considerably extended. Tests are conducted, not only to determine the relative quality of the different makes of lamps, but also to keep in touch with the quality of each make of lamp from month to month. During the conducting of life tests, it was noticed that some lamps showed tendencies towards undesirable behaviour along certain lines peculiar to themselves. The causes of these defects were investigated and the matter taken up with the manufacturers, who have shown willingness to co-operate with the Laboratory in eliminating as far as possible any feature detrimental to the best service of the lamp.

On life tests, all tungsten lamps are burned at the same efficiency, and are measured on the photometer at their rated voltages; measurements being taken before going on test, then after the first 25 hours, and after each succeeding 50 hours until 80 per cent. of the initial candle-power is reached. All carbon lamps are burned on the racks and measured on the photometer at the voltage necessary to bring the initial efficiency to 31 w.c.p.c., this being the rated efficiency at which, normally, carbon lamps are purchased. Life tests of the principle makes of lamps are run each month. On completion of each test, curves are plotted showing the performance of the lamps during life. The cost per 1,000 candle-hours, for each type of lamp, calculated from the results of the test, indicates which lamp is the most economical to use. This incidentally shows the relative cost of light from tungsten and carbon lamps. The following makes of lamps have been submitted for test during the year:—

Carbon Lamps

Brilliant	Rex
C.G.E.	Laco
Sunbeam	Robertson
Royal Ediswan	Premier
Chapman & Walker	Siemens
Friedman	Federal
Electrical Accessories Co.	Elec. Eng. E. Company
Watt	Central Electrical Co.

Tungsten Lamps

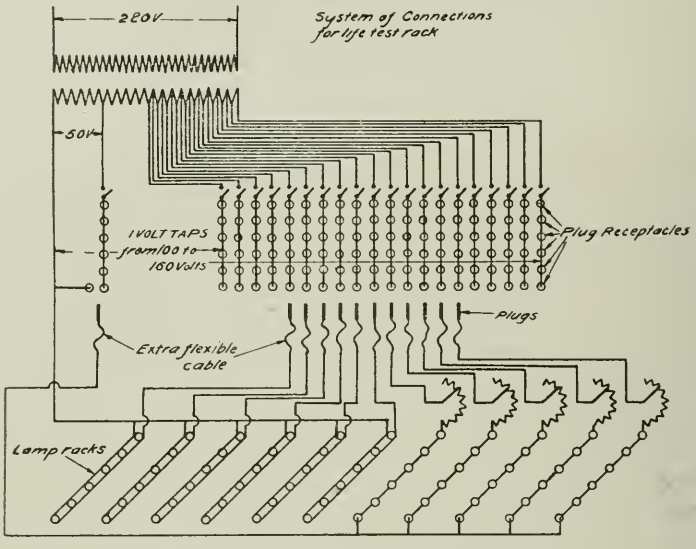
Condor	Franklin
Gwiazda	Bergmann
Edison	Westinghouse
Justram	French Palo
Laco	Graetzin
Sol	"Z"
Nulite	Medra
Volt	Lion
Holland	Monowatt
Sunbeam	Northern Light
Fedram	Wirum
Titan	Briton
Szel Import Co.	Rock,
	Helios

Lamps designed for special purpose have been tested, and the claims made for them substantiated or disproved. All lamps purchased by the Commission for distribution to the Municipalities, are submitted to test according to specifications which have been issued to lamp manufacturers, the procedure being briefly as follows:—

On a shipment of lamps being received, the Lamp Inspector selects at random 10 per cent. of each size and type of lamp, and examines them for mechanical and physical defects, and tests them for vacuum and evenness of filament. The lamps are then photometered to ascertain whether or not their rating and efficiency comply with the specifications. If more than 15 per cent. of any one size or type of the lamps inspected fail to comply with the specifications, the lot represented by those lamps is rejected. Approximately two per cent. of the lamps that have passed inspection are held for life test. Lamps that pass inspection, are stamped by the Inspector with the Commission's serial number, and placed in stock. In the event of any dissatisfaction arising from the use of the lamps, the defective ones may thus be traced, and their inspection reports referred to. This method of keeping in direct touch with the quality of the lamps handled by the Commission, is of direct benefit to the Municipalities or other consumers.

In August, the temporary quarters in Toronto sub-station were abandoned, and the entire equipment moved to the new laboratory building. In the reassembling, a few changes were made, calculated to increase the rapidity and accuracy of measurements, and a number of improved devices which have been made in the Laboratory workshop were added to the photometer equipment. Both standard and test lamps may be operated on one circuit controlled by one main rheostat, with smaller rheostats for individual adjustment; or by throwing over a small two-point switch both lamps are put on entirely separate circuits, each regulated by its own rheostat. Direct and alternating current are provided for use on the photmeter. Direct current is from storage battery, and is available at the photometer at any voltage up to 300. By changing the position of plugs on the main switchboard, any desired change of voltage may be secured. Alternating current is available in both 25 and 60 cycle, and to any desired voltage, and a close regulation is obtained by means of an induction type regulator

Adjoining the photometer room, is the room containing the life test lamp racks, where provision is made for testing 144 multiple lamps, and 30 series lamps. The receptacles for the multiple lamps are arranged in 24 circuits—six in each circuit. Those for the series lamps are arranged in five circuits, and a rheostat is in series with each circuit. The power is supplied to these racks by a 25 kw. transformer, 220 volts primary, and on the secondary side taps are brought out at 50 volts, and from 100 to 160 volts in one volt steps. The transformer taps are brought to a plug board, where receptacles are connected six to each tap, thus enabling six circuits to run on one voltage. By means of jumper cables plugged



Lamp Testing Transformer Diagram

from one group of receptacles to another, any number of circuits may be run on one voltage. Any multiple circuit may be run on any voltage from 60 to 160. Any series circuit may be run on any voltage from 50 to 110, or from 100 to 160, according to the position of the plugs on the common wire, whether placed in the fifty volt tap or the zero lead. The voltage is kept constant by an automatic voltage regulator in the primary circuit. An ammeter indicates the current flowing in any series circuit and a voltmeter is connected across the primary of the transformer.

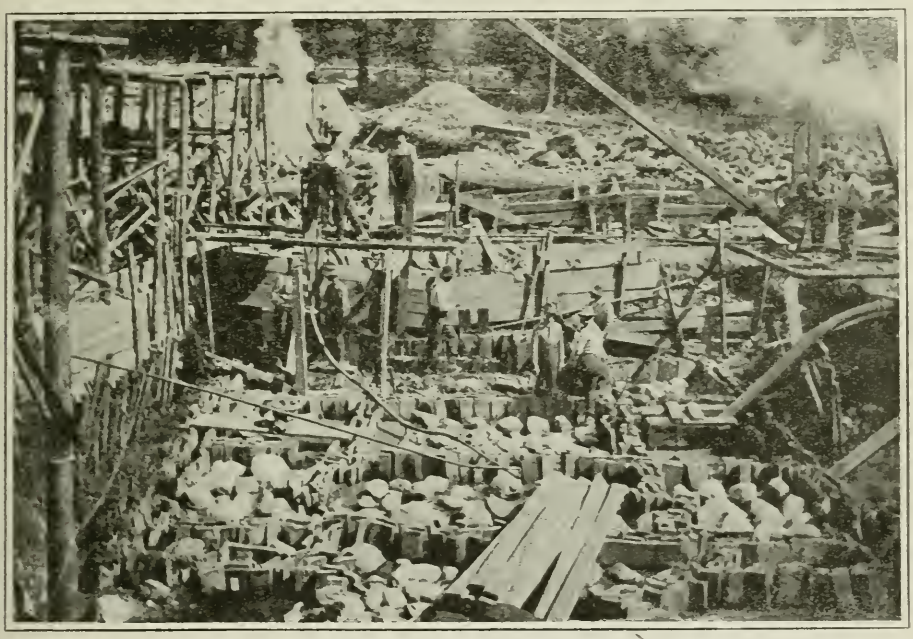
CHAPTER VI

HYDRAULIC INVESTIGATIONS

SUMMARY

Bonnechere Storage System

As set forth in previous reports, a scheme was inaugurated involving the possible ultimate construction of works to control storage on five of the principal lakes in the watershed of the Bonnechere River. The most important storage basin in this watershed is Round Lake, and the events which led up to the letting of a contract for the construction of the Round Lake dam, and the unfortunate but unavoidable conditions which obtained in connection with construction during the summer of 1912 have been mentioned in the report for that year.



Round Lake Dam—Showing Foundation Work under Sluices.

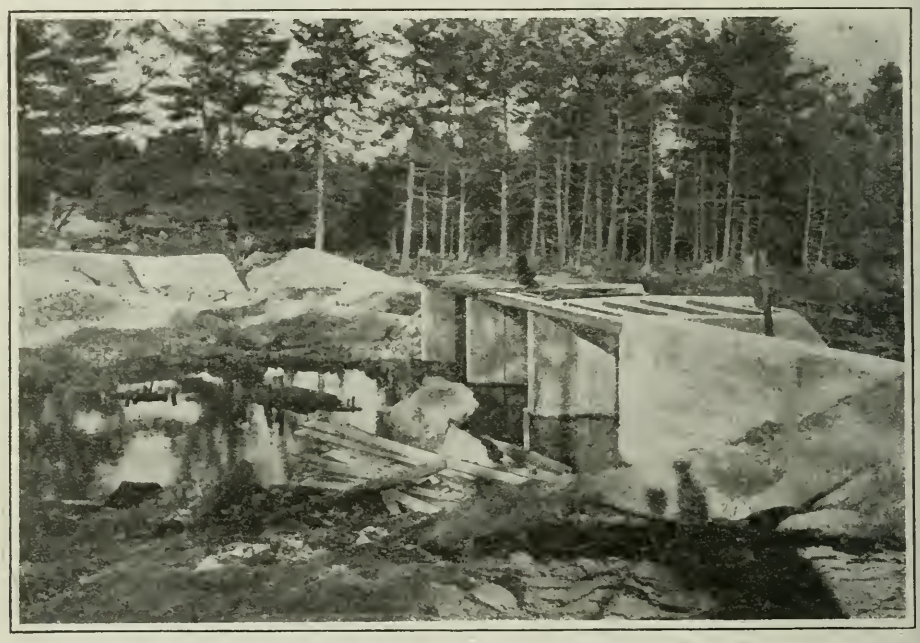
The absolutely unprecedented high water conditions which obtained during the summer culminated in a heavy flood during the first week in November, which rendered further progress impossible for the time being, and operations were suspended for the winter.

Owing to the fact that good gravel had been obtained in the immediate vicinity of the dam, the Contractor had been able to place concrete at about half the price per yard called for in his contract, and it became evident that a considerable saving in the ultimate cost of construction would be made if the work were taken over from the Contractor and completed by day labor. An agreement was therefore made with the Contractor for cancellation of the contract, on the condition that he be paid according to contract for the work already done, for the construction material delivered at the site, and for the actual cost of such cofferdams, trestles, etc., as could be used by the Commission for the completion of the work.

During the winter of 1913, sufficient cement was purchased and teamed into the dam to complete the work, and contracts were made with local farmers for timber and cordwood to be delivered at the site in time for the resumption of work in the summer of 1913.

Work was resumed on the dam about the middle of June, 1913, and the dam was practically completed by November 1st, 1913, as the accompanying illustrations will indicate. Unlike the summer of 1912, work conditions during the past season have been extremely favorable, and the sheet piled foundations under the sluices, which it was found practically impossible to place during the season of 1912, were successfully completed, although with considerable difficulty.

The Round Lake dam is designed to hold 9 feet of water on the sills. The area of the lake as determined by the survey is practically 11 sq. miles, so that the ultimate volume of storage will be 2,450 million cubic feet. At present only 6



Round Lake Dam—Looking Down Stream.

feet of storage draft is available, or a total volume of 1,840 million cubic feet, but the ultimate volume can be obtained when necessary by deepening the outlet, the sluiceway sills having been placed with this object in view.

During September of the present year a sudden shortage of water caused an almost complete shut-down of the Municipal hydraulic plant at Renfrew and the plant of the Renfrew Power Company. The Municipality applied to the Commission for assistance, more particularly with regard to the possibility of beginning at once the construction of a dam at the outlet of Golden Lake.

An investigation showed that the above mentioned shortage of water had been caused directly by the placing of a boulder dam across the river below Golden Lake by the Indians, in order that the swift water at the lake outlet could be navigated by canoes. These boulders had been placed some days previously, and at the time of examination the lake had filled up sufficiently to discharge its normal volume, and an adequate supply of water for power purposes was once more passing down the river.

In the matter of the building of a dam at Golden Lake, it was pointed out that by the time the Round Lake dam was completed there would be three to four feet of storage impounded, and capable of being discharged in sufficient quantities to materially augment the natural flow of the river, in the event of a water shortage occurring during the coming winter. Attention was also called to the fact that a considerable volume of water could be impounded by putting temporary repairs on the lumbermen's dams at the outlets of Paugh and Clear Lakes.

The attention of the interested parties was called to the fact that Golden Lake is the proper central point for the control of the Bonnechere storage system, and before efficient regulation can be realized a dam at the foot of Golden Lake is necessary. The Golden Lake dam should therefore be a permanent and well built structure, carefully designed to meet the requirements of central control, and for this reason it would not be good policy to rush into any hasty or ill-considered

Round Lake Dam—Looking Up Stream.

scheme for the immediate construction of a dam at Golden Lake, but rather to make all necessary surveys and prepare plans with the least possible delay, in order that the dam might be built during the next low water season, in the event of the interested parties then considering such procedure necessary or advisable.

A memorandum covering the above points was left with the Chairman of the Waterworks and Power Development Committee, and under date of October 3rd a formal resolution was forwarded to the Commission asking that a complete report with plans, specifications and estimates covering the construction of a suitable storage dam at Golden Lake be submitted to the Municipality, and that any surveys necessary in connection with the preparation of such report be made with the least possible delay.

In order that the request of the Municipality may be complied with, a suitable site for the proposed dam must be located and a traverse made of Golden Lake, in order that the practicable range of level variation may be determined and flooding rights procured. This work will be done during the coming winter.

County of Bruce

For some three years past we have been making a study of the power situation of the County of Bruce, with a view to working out some scheme whereby the municipalities in that county might be served with Hydro-electric power. This investigation has embraced the examination of hydraulic power sites already developed, and undeveloped power sites on the Saugeen River, but owing to an unfavorable combination of conditions, no feasible scheme of development or distribution has yet been devised.

The Saugeen Light and Power Co. has hydraulic plants at the present time near Southampton and Walkerton. They are both low head developments, and neither development has any attractive features from an hydraulic standpoint, nor would either of them be suitable sources of power for the district as a whole. For this reason, our efforts were directed chiefly towards working out a new and more extensive scheme of hydraulic development. In this connection, preliminary surveys of two possible power sites were made in the neighborhood of the towns of Southampton and Port Elgin, but the facts disclosed by these surveys indicated that the market possibilities of the district were not such as to justify the heavy expenditure which the development of either site would have involved.

In the hope of ultimately working out a feasible scheme for the County of Bruce, the investigations on the Saugeen River are still in progress, so that the absolutely essential data in connection with the flow characteristics of the Saugeen River will be available when the opportunity arrives to formulate a definite scheme.

Crown Leases

Under the terms of the Water-Power Lease issued by the Department of Lands, Forests and Mines, the plans and specifications covering the development of any power site owned by the Province must be approved by the Commission as a condition governing the issue of the lease. The most important matter dealt with under this head during the past year was the development of the Abitibi Pulp and Paper Co., at Iroquois Falls, on the Abitibi River. This scheme involved the building of a large power plant and pulp mill at Iroquois Falls, and the construction of a storage dam at the outlet of Lower Abitibi Lake. The power plant and mill are both under construction at the present time, in accordance with approved plans and specifications, and the works are being inspected from time to time.

The first visit of inspection was made on August 6th, 1913, subsequent to notification by the Company that a portion of the site of the main dam had been unwatered. This inspection was made primarily with the object of determining the nature of the bottom. The second inspection was made on September 9th, 1913, when construction was slightly further advanced. Reports covering these inspections are appended.

A report with plans covering the development of power at High Falls, on the Madawaska River, was submitted to the Commission for consideration before the issue of a lease to the parties interested. This report was found to be open to serious criticism in many respects, more particularly as regards the basic data upon which the final conclusions were based. A recommendation was therefore made that the granting of this lease be held over until such time as the applicants had supplied the additional information which was considered necessary.

Engineer's plans and specifications covering development on the York River by the Canadian Marble Co. were submitted for approval. Neither the report nor

the plans were approved primarily, by reason of the fact that the power capacity of the site was largely over-rated, and also because the plant was not designed in the best interests of economy and efficiency.

A second set of plans and specifications was then submitted embodying the changes recommended by the Commission's engineers. The revised plans and specifications were approved.

Dog Lake

Under date of February 20th, 1913, a letter was received from the Commission of Utilities, Port Arthur, transmitting the following resolution of the City Council:

"That the letter of the Commissioner, dated February 17th, *re* development of Dog Lake, be received and filed, and that he be authorized to make application on behalf of the City of Port Arthur to the Hydro-Electric Power Commission of Ontario for a detailed report on the development at Dog Lake for power purposes: said report to give the estimated capital cost and annual charges, and the available horse-power that could be developed, with the annual cost of 24 hour power at the low tension busbar step-down transformer station."

A copy of this resolution was also officially forwarded to the Commission under date March 3rd, 1913, by the Clerk of the Municipality.

Under date of February 4th, 1908, the firm of Smith, Kerry and Chase submitted a report to the City of Port Arthur in connection with the development of power at Dog Lake. The scheme of development covered by this report involved the construction of 5,400 feet of tunnel through the height of land between Big Dog and Little Dog Lakes. Extensive exploration work along the line of this tunnel by means of test pits and borings, showed nothing but fine gravel and sand, rock being nowhere in evidence. As very complete surveys were made in connection with this report, it was not considered necessary to give further consideration to the tunnel scheme of development as far as the field work was concerned.

Owing to the fact that the tunnel would require to be driven through sand and gravel, Messrs. Smith, Kerry and Chase provided in their estimates for the construction of cut-off walls at various points along the line of the tunnel, in order to prevent seepage along the course of the same. The possibility of leakage along the line of the tunnel is a matter requiring very serious consideration, for once started it could not be stopped, and the result might be the ultimate destruction of the works.

The topographical conditions at Dog Lake are such as to permit of development by means of a contour pipe or flume in place of the tunnel. Cursory inspection of the ground was not sufficient to definitely determine whether the flume method of development would be more expensive or less efficient than the tunnel scheme, but it would have the advantage of eliminating altogether the very serious hazard mentioned above in connection with the tunnel.

It was therefore considered advisable to have this alternative scheme of development carefully looked into, and with that end in view a party left for Dog Lake on September 9th, 1913, to make the surveys which will be necessary in order that a final report and comparative estimates on the two schemes may be submitted to the Municipality of Port Arthur.

This survey is still in progress and will be completed probably towards the end of November, 1913.

Fort Frances

Under date of June 11th, 1912, the Municipality of Fort Frances applied for an investigation as to the possibility of developing power at Foot Print Rapids, in sufficient quantities to supply the requirements of the Municipality.

In accordance with this request, a survey was made during the month of September, 1912. The conditions at the Foot Print Lake site were found to be such as to make it unsuitable for the purpose required, both as regards capacity and the cost of development, and as an alternative proposition a preliminary survey was made of a power site at Sand Island Falls, at the mouth of the Big Turtle River. Upon completion of the survey, a preliminary report, appended hereto, was prepared and submitted to the Municipality.

Grand River Improvement

Subsequent to the completion of the reconnaissance survey of the Grand River watershed mentioned in the Commission's report for 1912, a preliminary report, appended hereto, was submitted under date of March 31st, 1913, covering a proposed scheme of artificial storage and flood control on the Grand River, and outlining the scope of the field work which would be necessary in order to prepare a final report and set forth a definite scheme of procedure.

Following the recommendation of this preliminary report, an exhaustive study of the flow characteristics of the Grand River and its tributaries was begun in June, 1913, and at the present time gauging stations are established on the Grand River, and gauge recorders employed at each station to take readings of water level twice a day from gauges established. This work has now been carried through one low water season and some valuable information obtained. There has so far been a reasonably close relationship between gauge height and discharge. This satisfactory relationship has been mainly the result of low water conditions, and there is unfortunately no likelihood that similar conditions will obtain during high stages of flow, when the gauges will be unavoidably affected by back-water.

In anticipation of the effect of back-water upon the gauges, a line of levels was run up the Grand River valley as far as Bellwood, and for several miles up each of the main tributaries. The work was started at Dunnville, using the U.S. Lake Survey level of Lake Erie as a datum. Permanent bench marks referred to sea level were established at convenient intervals on the main stream and tributaries, as per the tabulation appended.

During the course of the work all accessible Geodetic Survey bench marks were picked up, and in every case a very satisfactory check was obtained. A reasonable check was also obtained on various railway elevations.

All the gauges from which water level readings are being taken on the Grand River and tributaries are set from these bench marks, consequently all gauges are set to the same datum throughout the watershed, and slope data can be taken directly from the gauge readers records. With the help of this slope data it is hoped that it may be possible to apply corrections to the gauge readings during high stages of flow, and thus eliminate to a large extent the effect of back-water.

Lake of the Woods

The negotiations between the United States and Canada relative to the water level of the Lake of the Woods, which came up for consideration under Article 9 of the Boundary Waters Treaty between Great Britain and the United States, are still under way, and final judgment of the Commissioners is being held pending

the receipt of the report of the consulting engineers of the Commission and the associate engineers of the various Government Departments involved. The collection of data has involved an immense amount of difficult field work, including flood damage surveys on the shores of the Lake of the Woods, storage surveys of the lakes lying along the International Boundary tributary to the Rainy River, and reconnaissance surveys of the secondary storage basins lying wholly within the boundaries of either country.

The field work in connection with the first two items, being on International waters, was carried on directly under the supervision of the engineers of the Joint Commission by field parties consisting of engineers and assistants appointed by Canada and the United States.

The investigation of secondary storage basins was carried on as a wholly domestic enterprise, and in the case of Canada the work was done by the Hydro-Electric Power Commission.

In connection with the work on the secondary storage basins, the possibility of making an instrumental traverse of the more important lakes was first considered, and to this end one of the Commission's engineers was sent north on December 27th, 1912, acting under instructions contained in the memorandum quoted below:—

"The object of your trip west is briefly to determine the ways and means of carrying on a winter survey of certain lakes in the Rainy River District. If possible, these lakes are to be traversed and the shore lines located with reasonable accuracy by means of triangulation and stadia. The lakes primarily involved are Lac des Milles Lacs, White Otter, Clear Water, Otukamamawan and Upper and Lower Manitou.

"From the maps at present available it would appear that Lac des Milles Lacs can be worked best from Savanne on the C. P. R., but the topographical map shows a winter road running into Baril Bay from the C. N. R., about two miles east of Huronian Station.

"White Otter and Clear Water Lakes could be worked either from Ignace on the C. P. R., or from Atikokan, on the C. N. R.

"Otukamamawan Lake can apparently best be worked from Mine Centre, on the C. N. R.

"Manitou Lake can apparently best be worked from Dinorwic or Wabigoon. There is a Hudson Bay store at Dinorwic.

"The matter of first importance which you are to determine is which, if any, of the above points would be the best to use for working the various lakes. To reach a decision in this matter you will require to consider the following points:

1. "The facilities for purchasing supplies and the names of parties from whom such supplies can be purchased.

2. "The facilities for hiring teams or dog trains, the names of parties from whom they can be hired and the probable price.

3. "Information as to the location of winter roads from the various supply bases chosen.

4. "Information as to the location of lumber camps on the various lakes to be worked.

5. "Information as to the location of deserted camps on the various lakes which might be used by survey parties.

6. "Information as to the possibility of hiring help at the various supply bases chosen.

7. "Information as to whether the weather conditions up to the present time have been such as to make the lake and bush roads suitable for team travel."

The report in connection with the above was submitted under date January 8th, 1913, in which it was set forth that Lac des Milles Lacs should be worked from Savanne, Upper and Lower Manitou Lakes from Wabigoon, Otukamamawan Lake from Mine Centre, and White Otter and Clear Water Lakes from Banning on the C. N. R.

Information was also submitted with reference to the purchase of supplies, hiring of help, etc.

The above report, considered in connection with data obtained from various maps covering the district indicated that, apart altogether from the great expense involved, it would be almost a physical impossibility to complete traverse and shore line surveys on these lakes within the time available for the work.

Investigation at Ottawa also disclosed the fact that compass and micrometer surveys covering most of these lakes had been made many years ago by the Geological Surveys Department of the Department of the Interior. These surveys plotted to a scale of one mile to the inch supplied with a sufficient degree of accuracy most of the information which the proposed winter surveys were intended to supply. This being the case, it was always possible to obtain much more accurate information as regards back-water damage and sites for storage dams during the summer season.

An engineer was accordingly sent west on August 1st, 1913, to cover the district involved in the investigation. His report covering storage capacity, possibility of back-water damage, and conditions at the outlets of the various lakes is appended hereto.

It may be mentioned that, in view of the immense storage capacity of the Lake of the Woods, Rainy Lake, and the chain of international lakes above Kettle Falls, it is unlikely that the lakes covered by the above mentioned report will ever require to be regularly used in connection with any general scheme of regulation necessary to control the levels of the Lake of the Woods. These lakes, if used at all for storage purposes, will be used more in connection with local power projects, and will not be so important as factors in the regulation of the International waters below.

Muskoka River Storage

For some years past the Town of Bracebridge has been suffering seriously during the low water season for lack of sufficient water to operate its hydraulic plant on the north branch of the Muskoka River, the conditions on several occasions being such that for weeks at a time hardly more than one-third of the connected load could be carried. Investigation indicated conclusively that the only means of preventing the continued recurrence of these conditions was by artificial storage.

From the standpoint of capacity, accessibility and efficiency of operation, the four large lakes above Port Sydney offered by far the best opportunities for artificial control.

The level of these lakes is now controlled by the Provincial Department of Public Works for navigation purposes, by means of a dam at Port Sydney at the foot of Mary Lake, and a lock and dam in the river between Mary Lake and Fairy Lake.

A proper study of the problem therefore involved consideration of the interests of navigation, and before taking any definite steps to assist the Municipality of Bracebridge, a communication was addressed to the Department of Public Works asking if the co-operation of that Department could be counted on in laying out some scheme by which the above mentioned lakes could be controlled to the advantage of the combined interests of navigation and power, and upon receiving the assurance of the Department of Public Works that its assistance and co-operation would be forthcoming, a party was sent into Port Sydney in the early part of January, 1913, to make the necessary surveys. The work was not completed when

Wasdell's Falls—Wheelpit Excavation Showing Nature of Foundation Material.

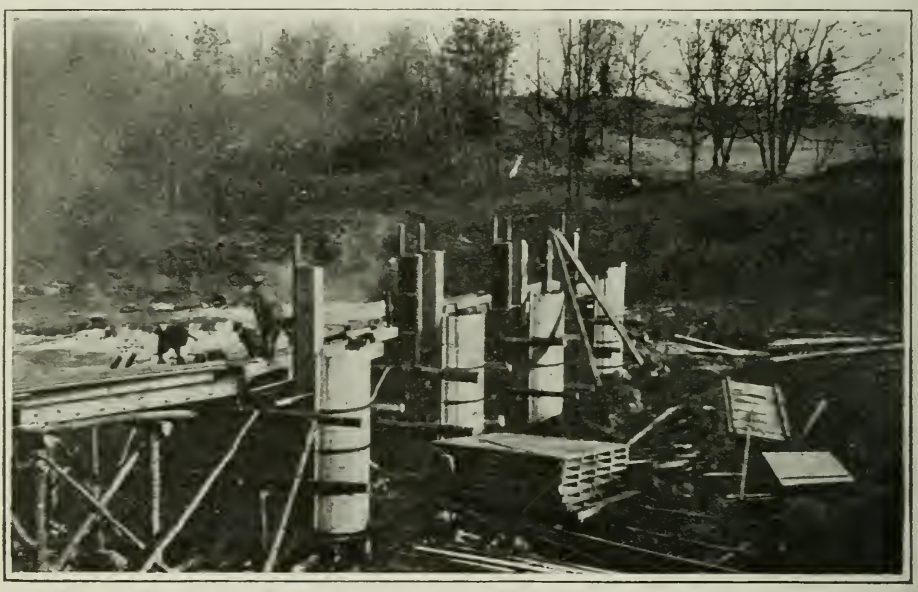
the spring break-up occurred, and some additional work was necessary during the summer. Subsequent to the completion of the surveys, a report was prepared which is now in the hands of the Minister of Public Works, and it is anticipated that a scheme will shortly be worked out, whereby the serious power situation in the Town of Bracebridge may be permanently relieved without injury to navigation.

Ontario County

Pursuant to the applications of the various municipalities in the County of Ontario, as set forth in the report for 1912, Enabling By-laws were passed in November, 1912, by the Municipalities of Woodville, Sunderland, Cannington, Beaverton and Brechin, and signed contracts were subsequently received from these municipalities covering the supply of 625 h.p., it having been previously determined that the power site at Wasdell's Falls on the Severn River was the only source of power from which these municipalities could be economically

served. Detailed investigations were immediately instituted upon execution of the above contracts, and estimates covering the cost of delivered power were submitted to the municipalities and found acceptable. Thereupon, the Commission, acting under authority of the Power Act, immediately forwarded to the Government a recommendation for the immediate issue of an Order-in-Council covering the purchase of the site and the development of power at Wasdell's Falls.

Although hydraulic investigation relative to this scheme had been under way for some time, no work had been done in connection with the power development itself, but immediately upon issue of the Order-in-Council under date of April 21, 1913, work was begun upon plans and specifications for the hydraulic portion of the plant. Tenders for the construction of the dam and power-house were called for June 16th, 1913, and tenders for the hydraulic equipment for June 20, 1913. The various contracts were awarded as follows:—



Wasdell's Falls Construction—Main Dam—September.

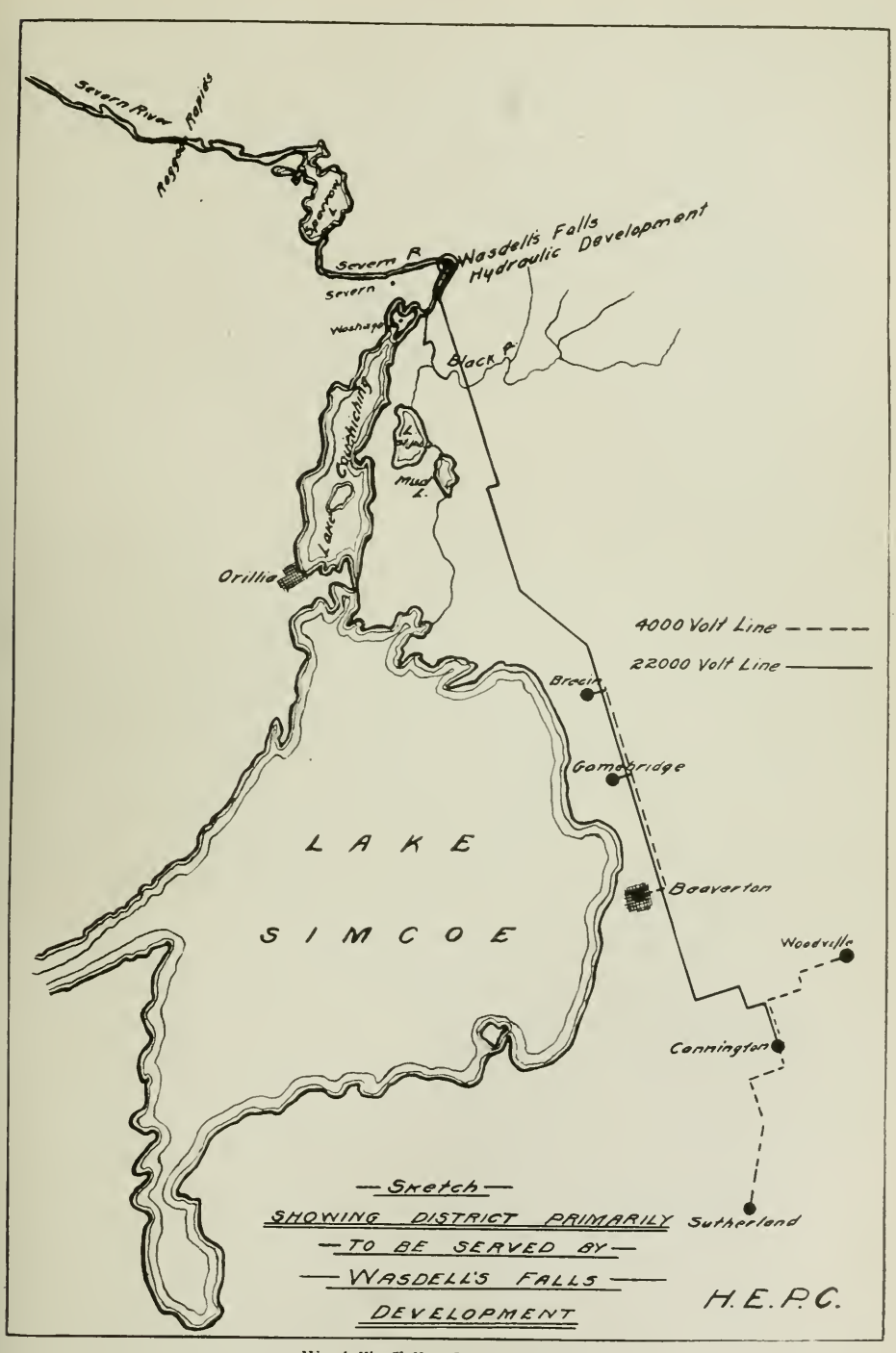
Dam and power-house—Galbraith & Cate, Montreal.

Turbines—Boving Co. of Canada, Toronto.

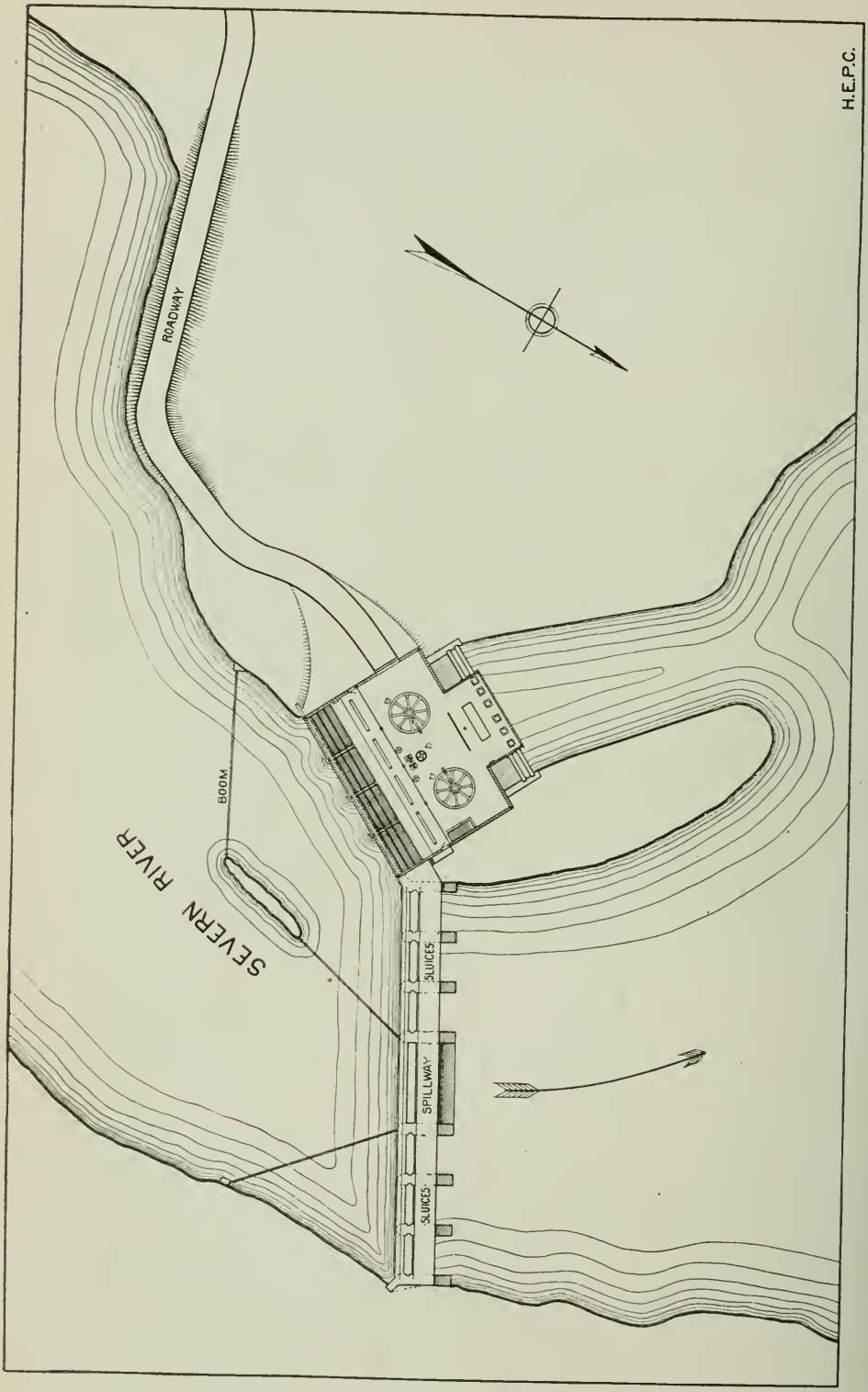
Stop-log winch and head-gate lifting mechanism—Wm. Kennedy & Sons, Owen Sound.

Crane—W. D. Beath & Son, Ltd., Toronto.

As regards the dam and power-house contract, the greater portion of the month of July was taken up by the Contractor in the purchase of plant and the installation of same at the site of work, and it was not until the middle of August that construction work was well under way. Since that time, however, good progress has been made, as the illustrations herewith submitted indicate, and there is every reason to anticipate that under the worst conditions likely to obtain the work will be beyond the reach of the high water of 1914, and with reasonable working conditions the entire works will be completed in May, 1914.



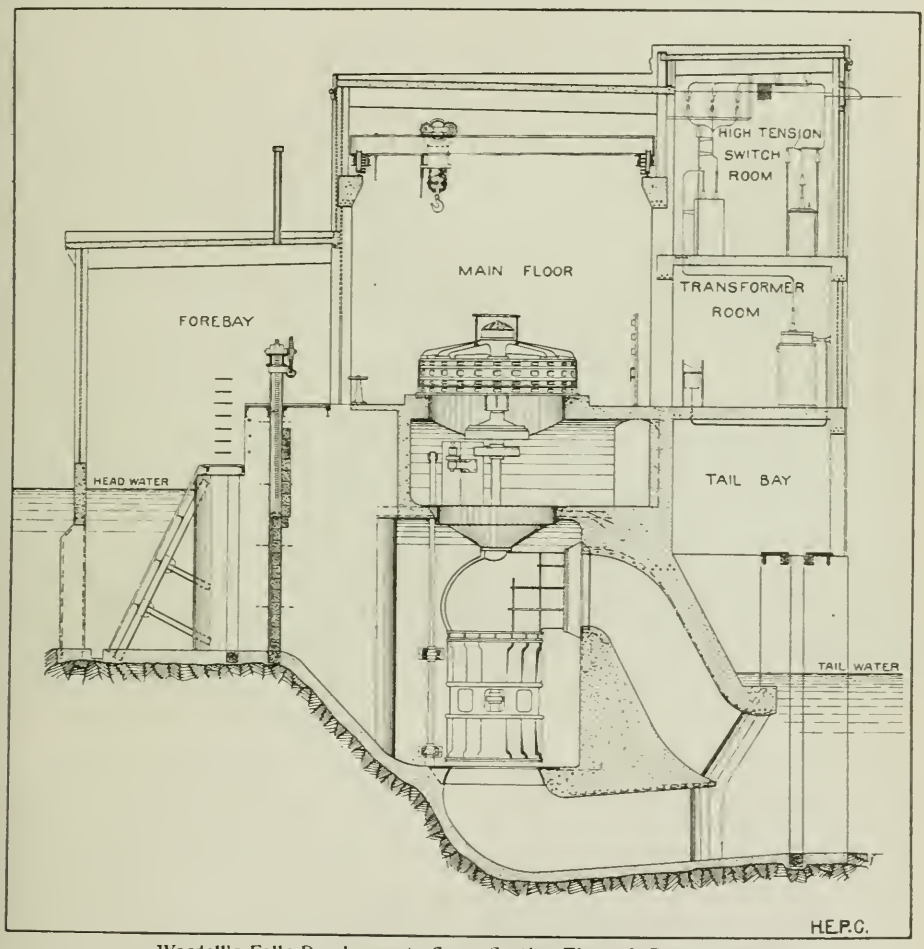
Wasdell's Falls—General Scheme



Wasdell's Fall's Development—General Lay-out.

The contracts entered into with the above municipalities do not by any means represent the extent of the market which the Wasdell's Falls development will serve. It is confidently expected that a large rural load will be developed in the flourishing agricultural townships of Mara, Thorah and Brock, and that the demands of these townships will practically double the present contracted load.

Apart from the low head, the topographical conditions at Wasdell's Falls are favorable for development purposes, and the value of the site as a source of power will be doubled when the dams incidental to the Trent Canal construction



Wasdell's Falls Development—Cross Section Through Power House.

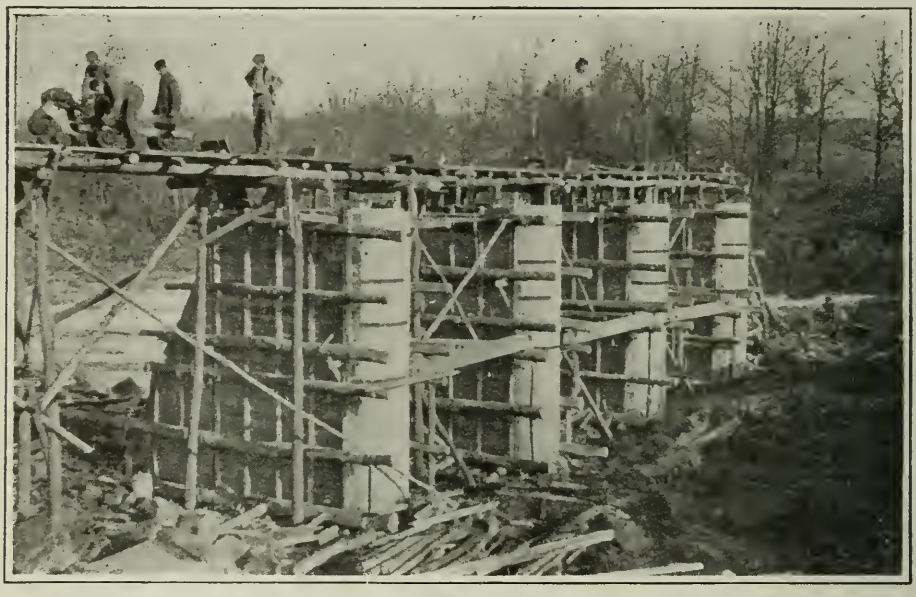
are built across the outlets of Lake Simcoe at Washago, which is less than three miles above the plant, making the immense storage capacity of Lake Simcoe during available low water periods. The hydrometric studies made in connection with this scheme are detailed in a report on the Severn River, appended hereto.

Owen Sound District

For some time past the Commission has been endeavoring to work out a feasible scheme whereby electric power might be supplied to the Town of Owen Sound and the surrounding district.

In the Annual Report for 1911, it was stated that the best local source of hydro-electric energy for this district was Eugenia Falls on the Beaver River, at present owned by the Georgian Bay Power Co., and a report was prepared (Report No. 17, Annual Report of 1911) based on such data as was then available, demonstrating the value of Eugenia Falls as a source of power. This report indicated that the site had a commercial capacity of about 2,000 h.p. under natural conditions, and about 4,000 h.p. if the total run-off of the watershed could be artificially controlled.

The success of any scheme of development at Eugenia Falls was dependent, to a large extent, upon the amount of power which could be used in Owen Sound, and upon the willingness of the Municipality to enter into a contract for the



Wasdell's Falls Construction—Main Dam—October.

supply of same. The Town took no definite action in connection with the matter until early in the present year, when the Light and Power Commissioners of Owen Sound opened negotiations with the Commission, with a view to ascertaining under what conditions they could obtain a supply of power, having special reference to the possibility of obtaining it from Eugenia Falls. After considerable discussion it was finally agreed that the Town of Owen Sound would enter into a contract with the Commission, if it could be proved to the satisfaction of the Municipality that Eugenia Falls was capable of supplying the necessary quantity of power. In this connection, the Light and Power Commissioners asked for further confirmation of the data submitted in the above mentioned report of 1911. While the Commission was satisfied to base its findings upon the 1911 report, it was nevertheless decided to accede to the request of the Municipality, and to this end a sharp-crested weir was built at Eugenia Falls, and a recorder employed for the purpose of making continuous measurements of flow. The Light and Power Commissioners wished particularly to be assured that the records of low water flow, as set forth in the report of 1911, be confirmed, and it so happened that the summer of 1913 was one of the driest on record in that district, so that

the results of the 1913 measurements are of great value as indicating the low water power capacity of the Eugenia Falls site. The details of the 1913 investigation and the comparison of the same with the results set forth in the 1911 report are dealt with in the appended report on the Beaver River. This report indicates that the contentions of the Commission's Engineers were sustained, and the results were sufficiently satisfactory to the Town of Owen Sound to justify the Municipality in entering into a contract with the Commission for the initial supply of 1,200 h.p., the same being executed under date of October 27, 1913.

Immediately following the execution of the above contract, the Commission made application to the Government for an Order-in-Council authorizing the

Wasdell's Falls Construction—Completed Piers—Main Dam.

Commission to purchase the works, assets, real property and rights of the Georgian Bay Power Co., together with such additional rights as might be necessary, and to develop power at Eugenia Falls and distribute same to the various municipalities in the Owen Sound district. The required Order-in-Council having been issued, the work of making a final survey of the site was commenced immediately and preparations made to proceed with the design of the plant. This work is in progress at the present time.

In connection with this development, it may be mentioned that the projected scheme calls for an operating head of 500 feet. With the exception of one or two plants in British Columbia, this will be the highest head in existence in Canada.

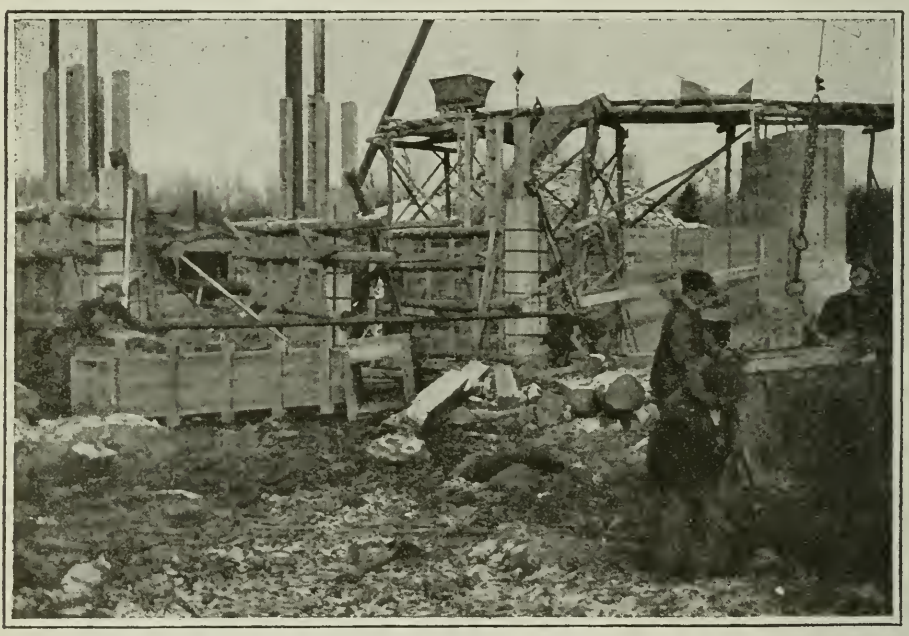
ABITIBI PULP AND PAPER COMPANY

On August 6th the site of the development of the above Company at Iroquois Falls was visited and construction work found well under way with about 350 men employed.

The T. & N. O. Railway has steel laid within a mile of the plant and grading is proceeding rapidly.

The discharge of the river at the present time is about 4,700 second feet and little difficulty is being experienced with unwatering, the coffer-dam which went out last Spring having been replaced.

The coffer-dam below the Falls which is being placed to unwater the tail-race is finished with the exception of the puddling. This coffer-dam is com-



Wasdell's Falls Construction—Form Erection for Forebay Arches and Inlet Piers.

posed of a single line of cribs clay puddled on the outside. On August 12th, the space inside this dam had been unwatered, but during the night the water broke through and filled the dam. This accident was due solely to the method of construction used, as the clay puddle on the outside of the cribs is absolutely unprotected and is being continually washed away by the current which runs parallel to the face of the dam. It would be much more economical to have placed a double line of narrow cribs with puddle between.

It is said that the rock at the foot of the reef under the grinder room is at least 15 feet lower than was expected, and perhaps more so, as there appears to be clay and gravel on the bottom. This may necessitate the moving of the power-house 15 or 20 feet up-stream so that the tail-race piers and draft-tubes, etc., may be set on solid rock within reasonable limits of cost.

No work is being done on the main dam yet, and the resident engineer stated that it would be some months before they would touch the dam. It seems altogether likely that this portion of the work will not be commenced until next spring.

Excavation for the other buildings on the shore is progressing and the foundations of the screen room are being placed. This portion of the work, however, does not concern the Commission as regards approval of plans, but it will be necessary to keep in touch with the work on the main dam and power-house foundations.

August 15, 1913.

Abitibi Pulp and Paper Company

The works of this Company at Iroquois Falls were visited on September 9, 1913, at which time the site of the power-house, tail-race and grinder room was completely unwatered. One small pump was handling the leakage through the coffer-dam, which was remarkably small.

Since the last inspection, a section of the coffer-dam on the river side which had previously sprung a bad leak, had been strengthened and protected by means of an outer crib. This outer crib prevents the erosion of the puddling clay, so that in all probability little further trouble need be expected with water at this point.

Below the rock ledge, on which the power-house will be placed, and where the tail-race piers are located, the unwatering has disclosed a condition which was previously reported as likely to obtain. The Falls here appear to have worn a huge hole in the rock, and at the time of inspection the Company's Engineer had not been able to find rock bottom in the depression. The natural bottom which is composed of loose rock, boulders, sand and clay, is at about elevation 750 with possibly 20 ft. to solid rock below.

The Company's Engineer states that they intend to fill this hole with a timber mat, upon which the tail-race piers will be built. The crib work will be securely tied together in such a way as to adequately provide against the possibility of scour at the bases of the piers.

In the vertical rock face below the power-house a certain amount of leakage was noticed, which evidently came through fissures in the bed rock. Until the surface rock has been stripped from the power-house site, it will be impossible to ascertain whether or not this leakage will cause serious trouble.

On the right bank of the river it is understood that the Company is going to place a clay fill between the end of the dam and the crest contour.

The proposed method of providing a foundation for the tail-race piers is not open to serious objection provided the crib-work is properly designed and carefully placed.

The Company should be required to place a concrete core wall or parallel rows of sheet piling with a concrete toe in the clay fill which they propose to place on the right bank. Either one or other of the above means is absolutely necessary to prevent saturation of the material, which in the case of clay would be sure to cause sliding and ultimate collapse. It is probably the intention of the Company to place the core wall or sheeting as recommended, but it would be advisable to bring the matter to their intention.

Toronto, September 30, 1913.

FORT FRANCES

Under date of June 11th, 1912, the Municipality of Fort Frances forwarded a resolution of the Council requesting a report on matters relating to the development of power at Footprint Lake and the cost of such power delivered to the Municipality.

The extent of the watershed tributary to the outlet of Footprint Lake indicated without further investigation that no considerable quantity of power could be developed unless the water could be used under a head of 100 feet or more. An examination and survey of the site in September, 1912, disclosed the following facts:—

1. That the difference in level between Footprint Lake and North-west Bay was about 41 feet.

2. That Footprint Lake could not economically be raised to such an extent as to materially increase this difference in level.

3. That of the total difference in level between Footprint Lake and North-west Bay only the upper 30 feet down to White Horse Rapids could be considered as capable of commercial development.

4. That the development of such a head would require a dam and intake works at Footprint Lake and approximately 4,500 feet of flume or pipe-line, constructed over an extremely difficult and unfavorable route.

The discharge of the stream, measured at the time the site was examined, amounted to 255 second feet. The river was not at minimum stage at that time, and taking the watershed area into consideration, a minimum flow of 150 sec. ft. would be a liberal estimate.

This would make the continuous minimum capacity of the site 400 h.p.

In view of the above it is evident that the Footprint Lake site cannot meet the demands of the industrial development which the Town of Fort Frances has in mind, and no further consideration of the same is necessary.

The above situation was anticipated before an examination of the site was made, and it was thought well to propose, if possible, an alternative scheme, which would more adequately meet the probable requirements of the Municipality. It was determined in this connection that Sand Island Falls was worth investigating. This site is located at the outlet of Little Turtle Lake and has a tributary watershed of about 1,750 sq. miles according to the best available maps. This is nearly four times the area tributary to Footprint Lake, so that the advantage as regards available flow is at once evident.

An examination and survey of the site at Sand Island Falls disclosed the following facts:—

1. That topographical conditions made it impracticable to carry the discharge of Little Turtle Lake across the portage into Redgut Bay, this having been the anticipated scheme of development.

2. That the feasible scheme of development would require the construction of a dam at the crest of Sand Island Falls of sufficient height to control the level of Little Turtle Lake.

3. That such scheme of development would make available an average head of 30 ft., and would control storage on Little Turtle Lake, which appears to have an area of about 12 sq. miles.

A measurement of flow out of Little Turtle Lake at the time the site was examined showed a discharge of 542 sec. ft. The probable minimum natural discharge will be in the neighborhood of 350 sec. ft. but with Little Turtle Lake controlled, a minimum discharge of 400 sec. ft. might reasonably be expected. With a 30 ft. head the Sand Island Falls site would therefore produce about 1,000 electrical horse-power under minimum conditions.

It should be noted that Big Turtle, Clearwater and White Otter Lakes provide exceptional facilities for artificial storage. The proper regulation of these basins should be such as to produce 100 h.p. per foot of head at Sand Island Falls, making the ultimate continuous capacity of the site 3,000 h.p.

The general hydraulic features of this scheme indicate, without the necessity of estimating, that the cost of generated power on the switchboard will be reasonable. When the cost of power delivered at Fort Frances is considered, however, it will be found that the advantages of low generation cost will be largely discounted by the addition of the transmission charge. The distance from Sand Island Falls to Fort Frances by the shortest feasible route is about 43 miles, and the topographical and geological conditions are such as to make line construction difficult and expensive.

In view of the above, the evidence of the appended estimate was not necessary to prove that the cost of power delivered to Fort Frances from any site on streams tributary to Rainy Lake could never under any circumstances compare favorably with the final cost of power developed at Coochiching Falls.

Owing to lack of knowledge as to the probable cost of installing storage works in the upper watershed, the initial development of 1,000 h.p. is the only one which could be safely considered in an estimate. It may be considered as certain, however, that the final cost of 3,000 h.p. delivered in Fort Frances from the maximum development would be considerably less than the cost incident to the delivery of 1,000 h.p. as hereunder submitted.

In conclusion, it is to be noted that the function of this report is advisory only, and the estimate is not a working estimate. The facts and figures submitted are believed, however, to be of sufficient accuracy to allow of a definite decision as to the commercial merits of the scheme as a whole. Should the Municipality wish to proceed with development on the strength of these findings, detailed surveys and a more or less prolonged course of hydrographic study will be necessary for the preparation of working estimates for the confirmation of this preliminary report.

The estimate below covers the preliminary installation of 1,000 h.p. capacity with foundation construction for an ultimate capacity of 3,000 h.p. Spare transformer capacity is provided, but no spare generating or transmission capacity.

A temporary peak load of 1,200 h.p. can be carried at the delivery end of the line, and if power is sold in Fort Frances under 20 minute monthly peak contracts, a connected load of 1,300 h.p. could probably be carried. Power to be transmitted at 22,000 volts.

Estimated Cost of Generating Plant

	Capital Cost	Annual Cost
Excavation and Unwatering	$15,150 00	.....
Masonry	17,660 00	$ 88 00
Hydraulic Installation	15,150 00	757 00
Electrical Installation	15,500 00	855 00
Power-house Accessories	2,500 00	200 00
Timber and Regulating Mechanism	3,350 00	268 00
	$69,310 00	$2,168 00
Engineering and Contingencies, 10%	6,931 00	217 00
Interest during construction, 3%	2,079 00	65 00
Interest, 4½% on $78,320	.....	3,528 00
Sinking Fund, 1.8% on $78,320	.....	1,411 00
Operation and Administration	.....	3,000 00
Power Rental	.....	500 00
	$78,320 00	$10,889 00

Cap. cost of 1 h.p. generated, $78.32.
Annual cost of 1 h.p. generated, $10.89.

Estimated Cost of Transmission and Transformation

	Capital Cost	Annual Cost
Step-up Transformation	$ 8,000 00	$ 480 00
Transmission Line	86,000 00	4,750 00
Step-down Transformation	15,000 00	655 00
	$109,000 00	$5,885 00
Engineering and Contingencies, 10%	10,900 00	589 00
Interest during construction, 3%	3,270 00	177 00
Interest, 4½% on $123,170	.....	5,543 00
Sinking Fund, 1.8% on $123,170	.....	2,217 00
Operation and Administration	.....	2,000 00
Patrol	.....	500 00
	$123,170 00	$16,911 00

Cap. cost of 1 h.p. transmitted, $123.17.
Annual cost of 1 h.p. transmitted, $16.91.

Summary

	Capital Cost	Annual Cost
Cost of Generation	$78,320 00	$10,889 00
Cost of Transmission and Transformation	123,170 00	16,911 00
Total	$201,490 00	$27,800 00

Capital Cost per h.p. of 1000 h.p. continuous 24 hour power delivered Fort Frances ready for 2200 volt distribution, $201.49.

Annual Cost as above for 1000 h.p., $27.80.

Annual Cost as above based on sale of a connected load of 1300 h.p., $21.40.

Toronto, January 31, 1913.

GRAND RIVER IMPROVEMENT

Preliminary Study dealing with the Possibility of Improving the General Regimen and Local Flow Characteristics of the Grand River by means of Storage and Training Works

Through the progressive obliteration of physical influences governing natural control, the flood flow of the Grand River has for some years past been gradually increasing in volume and destructiveness.

Consequent upon this steady increase in flood discharge, the low-water flow has been as steadily decreasing, so that in addition to a large annual loss by flood damage, there has been a material loss through shrinkage in power capacity. The realization that these conditions would tend to become worse year by year, led a number of the interested Municipalities to solicit the help of the Provincial Government in the matter of an investigation for the purpose of devising, if possible, a feasible remedy; such remedy to serve the joint purpose of ameliorating flood conditions and of increasing the power capacity of the stream under conditions of minimum flow.

During the fall of 1912 a reconnaissance survey was made of the Grand River watershed covering the main stream from Caledonia to headwaters; also of the larger tributaries, including Whiteman's Creek, and the Nith, Speed and Conestogo Rivers from their confluence with the main stream to headwaters.

The main purpose of this reconnaissance was not to furnish definite data as to the possibility or method of flood control, but rather to eliminate from the problem all portions of the watershed possessing physical characteristics of such a nature as to make more detailed examination plainly unnecessary. With the scope of the investigation thus restricted, it remained to ascertain what locations, if any, merited examination as sites for storage reservoirs and regulating works. The following locations, having the desired characteristics in varying degree, were established:

1. A site between Paris and Glenmorris, where by means of a 40 foot dam a storage area of about 1,000 acres would be created. There is also in this vicinity a possibility of controlling about 1,400 acres of storage by means of a 70 foot dam. In both instances the back-water damage would be large, and in the case of the 70 foot dam, would involve the drowning out of several buildings and a considerable length of highway.

2. A site near the village of Blair, where a 30 foot dam would create a storage area about 1,400 acres in extent. The flooded area in this case would be largely meadow land.

3. A site near the town of Elora, where a 30 foot dam would create a storage area about 3,000 acres in extent, the back-water damage involving principally meadow land and river flats.

4. Two sites on the Conestogo River, one of which would have a storage area of about 1,200 acres with a 40 foot dam, and the other about 1,000 acres with a 30 foot dam. In the first case, the back-water damage would involve cultivated land and a number of buildings. In the second case, pasture land would be mainly involved.

5. Two sites on the Speed River, one of which would have a storage area of about 600 acres with a 30 foot dam, and the other about 800 acres with a 35 foot dam. The flooded land is both cases would be swamp and poor meadow land.

6. A site on the Nith River near Canning, where a 65 foot dam would control about 1,100 acres of storage. The back-water damage would be heavy, as a number of buildings would be involved.

7. A site on Whiteman's Creek near Mount Vernon, where a 45 foot dam would control about 450 acres of storage. The topography of the dam-site in this case would allow the construction of a 60 foot dam, but the back-water damage would be very largely increased.

While it is to be understood that the above figures are superficial approximations only, it seems reasonably certain that a system of storage basins as above described would have an aggregate inpounding capacity of not less than five billion cubic feet, in which event some beneficial effect through flood control might be expected.

While the information now available seems to indicate that material benefit may be derived from the construction of storage works, the extent of this benefit and the construction cost cannot be even approximately estimated without the help of instrumental surveys and comprehensive hydrographic study.

For the past eight months gauging stations have been maintained on the Grand River, at Brantford, Glenmorris, Blair and Elora. These stations have been so located as to provide information in connection with the characteristics of the main tributaries, and discharge measurements have been made periodically at each station. These measurements, besides recording the flow characteristics of the river under natural conditions and at different seasons, will provide the necessary data for forecasting the behavior of the river under future conditions of regulated flow.

The surveys necessary will involve,—

1. Instrumental determination of channel slope.

2. Detailed instrumental surveys of sites for proposed dams.

3. Surveys of storage basins to establish flood contours, and to determine the maximum possible or permissible limit of back-water.

The data derived from these surveys will provide the necessary information as to the two governing factors of artificial regulation; namely, the obtainable volume of storage capacity, and the extent of back-water damage. If this information proves that material benefit may be derived from the construction of storage works, the next step will be the exploration of foundation material by means of borings and test-pits, after which detailed construction plans will be prepared with estimates of cost.

It may be here mentioned that throughout the Grand River watershed, with the possible exception of that of the Speed River, the topographical features are unfavorable as affecting the height and length of the necessary dams, and the geological features are unfavorable as affecting their foundations. It is, therefore, certain that the creation of storage reservoirs of adequate capacity will entail a large capital expenditure. This expenditure will also be unfavorably influenced by the necessity of providing large spillway and sluice capacity for the safe passage of flood discharge.

Apart from conservation, another important element of flood control is the handling of back-water and the prevention of riparian damage due to erosion. The proper study of the problem under consideration will, therefore, necessitate the examination and survey of restricted channel sections, and of localities favorable to the formation of ice-jams; also a study of back-water effect due to existing dams.

With this information available it will be possible to determine to what extent, if any, flood damage can be reduced by means of channel improvement and the construction of training works.

The final phase of the investigation will be a careful examination of the more remote portions of the watershed to ascertain whether natural run-off conditions will be materially influenced by the permanent retention of existing swamp area, and furthermore, if any benefit might be gained by allowing areas now drained and reclaimed to lapse into their natural state.

In view of the important interests involved, and the practical certainty of a continuous annual increase in the extent of flood damage in the Grand River Valley, there can be no question as to the necessity of an investigation to determine the means by which this abnormal condition can be remedied or ameliorated.

As the solution of this problem will depend primarily upon data collected in the field, and as the investigation so far made seems to indicate that appreciable benefit is to be derived from the works projected, it is recommended that surveys be carried out along the lines above described, and with the least possible delay.

In conclusion, it is important to note that any experience obtained, or evidence of benefit derived from the carrying out of a flood control scheme on the Grand River, could be advantageously applied to several other streams in the South-western Peninsula which suffer from lack of natural control. Among the most important of these streams are the Thames, the Maitland and the Saugeen.

Toronto, March 31st, 1913.

Daily Gauge Height and Discharge of Grand River, near York, for 1913

Drainage area, 2,311 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.90	500	593.50	275	593.71	370	593.73	385	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.94	570	593.54	250	593.73	385	593.75	400	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.92	530	593.42	188	593.71	370	593.73	385	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.90	500	593.46	205	593.67	350	593.52	235	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.90	500	593.46	205	593.91	295	593.50	225	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	594.00	600	593.48	210	593.65	338	593.46	205	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	594.14	709	593.50	225	593.62	300	593.44	190	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	594.04	635	593.50	225	593.65	338	593.58	275	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	594.02	610	593.50	225	593.64	329	593.60	285	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.98	570	593.44	215	593.61	291	543.65	338	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.98	570	593.56	265	593.61	291	593.63	315	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.94	555	594.00	600	593.56	260	593.67	350	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.96	560	594 06	650	593.58	275	593.65	338	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.94	550	593.98	585	593.58	275	593.76	410	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.96	560	593.94	565	593.56	260	593.64	320	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.96	560	593.90	500	593.56	260	593.58	275	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.96	560	593.67	350	593.48	215	593.58	275	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.88	490	593.71	370	593.50	225	593.60	285	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.84	465	593.97	565	593.52	240	593.44	215	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.71	370	593.71	370	593.52	240	593.62	300	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.81	440	593.59	275	593.58	275	593.75	400	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.77	425	593.67	350	593.71	370	593.79	430	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.75	400	593.75	400	593.71	375	593.83	465	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.71	370	593.61	295	593.73	385	593.88	500	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.69	355	593.69	360	593.73	385	394.04	630	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.69	365	593.73	385	593.79	430	594.19	790	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.65	338	593.71	370	593.82	455	594.27	860	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.65	338	593.67	350	593.79	430	594.19	790	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.59	275	593.65	338	593.75	400	594.12	705	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.54	240	593.62	300	593.77	415	594.12	705	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.59	275	593.73	285	.....	.....	594.12	705	.....	.....	.....	.....

Daily Gauge Height and Discharge of Grand River, at Glen Morris, for 1913

Drainage area, 1,385 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.32	230	802.25	160	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.28	190	802.30	220	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.28	190	802.28	190	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.28	190	802.24	150	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.26	170	802.28	190	802.20	100	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.22	130	802.28	190	802.28	190	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.22	130	802.28	190	802.30	220	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.20	100	802.28	190	802.33	240	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.24	150	802.27	180	802.32	230	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.49	430	802.26	170	802.30	220	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.61	575	802.28	190	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.45	380	802.28	190	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.45	380	802.25	160	.....	.....	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.45	380	802.23	135	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.36	280	802.24	150	218	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.24	150	.....	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.26	170	.....	.....	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.29	210	.....	.....	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.26	170	.....	.....	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.28	190	.....	.....	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.36	280	802.24	150	802.28	190	.....	.....	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.36	280	802.36	280	802.32	230	802.31	225	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.34	250	802.36	280	802.32	230	802.39	310	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.32	230	802.36	280	802.34	250	802.50	440	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.32	230	802.36	280	802.33	240	802.50	440	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.36	280	802.30	220	802.58	540	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.36	280	802.30	220	802.50	440	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.36	280	802.20	100	802.53	470	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.36	280	802.28	190	802.50	440	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.36	280	802.28	190	802.50	440	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	802.28	190	802.34	250	.....	.....	802.48	420	.....	.....	.....	.....

Gauge destroyed by school children. Elevation varied very little.

Daily Gauge Height and Discharge of Grand River, at Galt (Concession St. Bridge), for 1913

Drainage area, 1,356 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.68	108	851.73	123	851.85	160	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.65	100	851.77	135	851.93	190	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.63	90	851.77	135	851.95	200	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.71	118	851.77	135	851.81	148	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.65	199	851.75	130	851.64	95	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.65	100	851.71	118	851.04	230	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.64	95	851.73	123	851.95	200	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.71	118	851.71	118	851.97	210	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.79	140	851.69	112	852.00	220	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	852.26	318	851.67	107	851.93	190	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	852.33	340	851.64	95	851.87	170	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	852.08	240	851.65	100	851.64	95	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	852.04	230	851.60	80	852.02	228	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	852.00	220	851.62	90	851.98	215	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.89	175	851.64	95	852.02	228	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.88	170	851.64	95	851.95	200	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.75	130	851.73	123	852.02	228	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.75	130	851.79	140	851.99	215	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.73	123	851.85	160	851.91	185	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.64	95	851.83	150	851.87	170	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.89	172	851.69	110	851.81	148	852.18	280	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.91	185	851.87	170	851.85	160	852.23	305	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.85	160	851.85	160	851.91	185	852.27	318	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.77	135	851.87	170	851.83	150	852.45	390	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.81	148	851.83	150	851.73	123	852.46	395	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.77	135	851.76	135	851.91	185	852.38	360	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.75	130	851.83	150	851.69	112	852.33	340	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.81	148	851.87	170	851.60	80	852.29	325	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.79	140	851.79	140	851.83	150	852.33	340	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.76	135	851.81	148	851.98	215	852.33	340	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	851.71	118	851.79	140	.....	.....	852.39	365	.....	.....	.....	.....

Daily Gauge Height and Discharge of Grand River, at Conestogo, for 1913

Drainage area, 538 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.77	22	1017.97	43	1017.75	21	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.77	22	1017.77	22	1017.81	26	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.56	10	1017.66	16	1017.67	16	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.55	10	1017.68	17	1017.69	17	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.62	13	1017.80	25	1017.66	16	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.66	16	1017.83	28	1017.70	18	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.75	21	1017.60	12	1017.68	17	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.75	21	1017.75	21	1017.75	21	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.89	34	1017.66	16	1017.72	20	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1018.06	61	1017.66	16	1017.75	21	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1018.12	78	1017.64	14	1017.85	30	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1018.10	72	1017.78	23	1017.72	19	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1018.14	82	1017.86	31	1017.84	29	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.77	22	1017.61	12	1017.72	20	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.73	17	1017.63	14	1017.87	31	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1018.10	72	1017.80	25	1017.62	13	1017.86	31	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1018.10	72	1017.66	16	1017.64	14	1017.87	31	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.85	30	1017.63	14	1017.66	16	1017.93	40	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.82	27	1017.64	14	1017.73	20	1017.93	40	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.66	16	1017.73	17	1017.79	24	1017.91	37	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.77	22	1017.60	12	1017.72	19	1018.10	72	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.72	19	1017.85	30	1017.70	18	1018.12	75	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.82	27	1017.94	40	1017.73	20	1018.11	74	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.83	28	1017.77	22	1017.83	28	1018.27	121	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.77	22	1017.81	26	1017.73	20	1018.22	106	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.79	24	1017.80	25	1017.88	32	1017.99	48	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.64	14	1017.79	24	1017.83	28	1018.12	75	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.65	15	1017.77	22	1017.68	17	1018.20	100	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.70	18	1017.95	42	1017.87	31	1018.13	75	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.68	17	1017.73	17	1017.79	24	1018.23	109	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1017.80	25	1017.57	11	.....	.....	1018.10	72	.....	.....	.....	.....

Daily Gauge Height and Discharge of Grand River, at Belwood, for 1913

Drainage area, 270 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.79	4	1366.83	5	1366.83	5	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.77	3	1366.83	5	1366.83	5	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.75	3	1366.83	5	1366.83	5	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.75	3	1366.83	5	1366.83	5	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.75	3	1366.83	5	1366.83	5	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.77	3	1366.83	5	1366.83	5	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.79	4	1366.79	4	1366.83	5	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.79	4	1366.79	4	1366.83	5	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.89	7	1366.79	4	1366.83	5	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.96	9	1366.79	4	1366.83	5	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.90	7	1366.79	4	1366.85	5	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.88	6	1366.81	4	1366.92	7	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.85	5	1366.79	4	1366.92	7	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.83	5	1366.79	4	1366.92	7	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.81	4	1366.79	4	1366.88	6	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.79	4	1366.79	4	1366.88	6	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.79	4	1366.85	5	1366.88	6	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.77	3	1366.90	7	1366.92	7	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.75	3	1366.88	6	1367.00	11	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.75	3	1366.87	5	1367.00	11	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.92	7	1366.90	7	1367.00	11	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.96	9	1366.85	5	1367.00	11	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.94	9	1366.83	5	1367.10	18	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.88	6	1366.85	5	1367.19	31	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.83	5	1366.88	6	1367.13	21	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.83	5	1366.88	6	1367.04	13	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.83	5	1366.85	5	1367.04	13	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.83	5	1366.83	5	1367.05	13	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.85	5	1366.85	5	1367.08	16	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.88	6	1366.88	6	1367.06	14	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1366.88	6	.....	.....	1367.00	11	.....	.....	.....	.....

Daily Gauge Height and Discharge of Nith River, near Canning, for 1913

Drainage area, 386 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.88	105	800.78	88	801.11	148	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.86	102	800.90	110	800.99	122	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.76	86	801.07	139	801.07	139	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.67	73	801.15	155	801.20	165	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.17	162	800.96	122	800.11	147	800.90	110	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.46	225	801.05	134	801.07	139	800.63	74	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.26	183	801.01	125	800.84	98	801.01	126	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.38	200	801.07	139	801.01	125	801.11	148	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.30	190	801.07	139	801.34	193	801.03	128	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.13	148	801.76	292	801.11	137	800.88	106	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.30	190	801.46	226	800.82	93	800.82	93	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.17	161	801.09	143	801.03	130	800.94	116	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.21	170	801.38	204	800.82	93	800.84	98	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.96	122	801.13	148	800.92	113	801.09	142	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.13	148	801.29	188	800.69	75	801.03	128	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.05	134	801.30	190	801.05	134	800.89	108	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.07	139	801.19	160	801.09	142	801.21	168	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.07	139	801.13	148	800.86	102	801.10	145	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.11	147	801.05	134	800.99	122	800.98	123	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.30	40	800.90	110	800.72	79	801.00	124	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800 60	70	800.94	118	800.92	113	801.25	185	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.96	122	800.92	114	801.01	125	801.23	170	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.05	134	801.11	148	801.28	185	801.27	188	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.96	122	801.09	143	801.05	134	801.37	208	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.01	130	800.78	88	800.97	126	801.39	210	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.88	105	600.82	93	801.05	134	801.29	188	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.92	113	801.01	125	801.13	148	801.35	204	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	801.09	143	801.19	162	800.92	113	801.25	180	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.94	116	800.99	122	800.80	90	801.33	198	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.88	105	801.07	139	801.09	142	801.31	192	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800.94	116	800.97	120	.....	.....	801.35	204	.....	.....	.....	.....

Daily Gauge Height and Discharge of Speed and Eramosa Rivers, at Gordon St. Bridge, Guelph, for 1913

Drainage area, 193 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.78	6	1006.01	14	1006.13	20	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.88	9	1006.05	16	1006.05	16	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.72	5	1005.88	9	1006.05	16	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.76	6	1005.97	13	1006.01	14	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.76	6	1006.05	16	1006.01	14	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.76	6	1006.09	18	1006.05	16	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.76	6	1005.97	13	1006.13	20	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.84	7	1005.92	11	1006.09	18	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.05	16	1005.92	11	1006.13	20	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.17	23	1005.97	13	1006.09	18	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.26	29	1005.88	9	1006.01	14	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.26	29	1005.97	13	1005.97	13	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.26	29	1006.01	14	1006.01	14	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.26	29	1005.88	9	1006.13	20	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.05	16	1005.72	5	1006.22	26	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.01	14	1005.76	6	1006.22	26	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.92	11	1005.84	7	1006.17	23	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.92	11	1006.13	20	1006.22	26	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.84	7	1006.01	14	1006.13	20	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.72	5	1006.13	20	1006.26	29	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.82	7	1006.17	23	1006.51	48	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.84	7	1006.09	18	1006.34	34	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.88	9	1006.26	29	1006.30	32	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.97	13	1006.22	26	1006.39	37	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.05	16	1006.09	18	1006.60	58	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.09	18	1006.09	18	1006.29	31	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.26	29	1006.01	14	1006.35	35	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1006.22	26	1006.09	18	1006.33	33	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1003.97	13	1006.17	23	1006.09	18	1006.31	32	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.71	5	1006.13	20	1006.09	18	1006.29	31	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1005.72	5	1005.88	9	.....	.....	1006.31	32	.....	.....	.....	.....

Daily Gauge Height and Discharge of Speed River, near Guelph (Leslie's Bridge), for 1913

Drainage area, 63 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.17	7	1108.15	7	1108.27	10	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.08	5	1108.22	8	1108.12	6	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.02	4	1108.15	7	1108.14	7	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.06	4	1108.30	11	1108.21	8	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.07	5	1108.19	8	1108.33	12	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.06	4	1108.25	9	1108.14	7	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.08	5	1108.17	7	1108.20	8	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.17	7	1108.21	8	1108.24	9	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.17	7	1108.12	6	1108.24	9	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.20	8	1108.24	9	1108.23	9	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.22	8	1108.17	7	1108.19	8	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.17	7	1108.23	9	1108.26	9	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.17	7	1108.14	7	1108.28	10	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.18	7	1108.05	4	1108.27	9	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.14	7	1108.14	7	1108.22	8	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.13	7	1108.17	7	1108.26	9	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.14	7	1108.26	9	1108.31	11	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.13	7	1108.14	7	1108.32	11	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.18	8	1108.37	13	1108.26	9	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.15	7	1108.14	7	1108.26	9	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.15	7	1108.14	7	1108.31	11	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.31	11	1108.39	15	1108.39	15	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.17	7	1108.34	12	1108.37	13	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.24	9	1108.17	7	1108.47	21	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.28	10	1108.17	7	1108.46	20	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.18	7	1108.34	12	1108.49	23	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.07	4	1108.12	6	1108.48	23	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.28	10	1108.18	8	1108.09	6	1108.49	23	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.11	6	1108.15	7	1108.13	7	1108.50	24	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.24	9	1108.28	10	1108.17	7	1108.54	27	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1108.15	7	1108.30	11	.....	.....	1108.44	19	.....	.....	.....	.....

Daily Gauge Height and Discharge of Conestogo River, at St. Jacob for 1913

Drainage area, 312 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.00	9	1058.00	9	1058 00	9	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1058.04	12	1058.00	9	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.91	6	1058.04	12	1058.00	9	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.91	6	1058.04	12	1058.04	12	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.91	6	1057.95	8	1057.95	7	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.91	6	1057.95	8	1057.93	6	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1057.91	6	1057.95	7	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.00	9	1057.91	6	1057.95	7	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.08	15	1057.95	7	1057.9ɔ	7	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.12	18	1057.95	7	1057.95	7	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.08	15	1057.95	7	1057.97	8	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.08	15	1057.95	7	1057.94	6	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.00	9	1057.91	6	1058.04	12	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.00	9	1057.91	6	1057.97	8	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.00	9	1057.91	6	1058.08	15	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.32	37	1058.00	9	1057.91	6	1058.06	14	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.24	30	1058.00	9	1058.00	9	1057.97	8	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.16	21	1058.00	9	1057.95	7	1057.95	7	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.00	9	1058.00	9	1057.95	7	1057.95	7	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.91	6	1058.00	9	1057.95	7	1058.12	18	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1057.95	7	1058.00	9	1058.16	21	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1057.97	8	1058.00	9	1058.04	12	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.04	12	1058.00	9	1057.96	8	1058.08	15	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1058.00	9	1057.93	6	1058.16	21	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1058.00	9	1058.00	9	1057.95	7	1058.10	17	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1058.04	12	1057.95	7	1058.12	18	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.91	6	1058.01	10	1058.04	12	1058.33	40	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.91	6	1058.04	12	1058.05	13	1058.25	30	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1058.00	9	1058.04	12	1058.46	63	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1058.00	9	1058.00	9	1058.62	99	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1057.95	7	1058.00	9	.....	.....	1058.81	158	.....	.....	.....	.....

Daily Gauge Height and Discharge of Fairchild's Creek, near Onondaga, for 1913

Drainage area, 112 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.02	13	622.04	15	622.04	15	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.04	15	622.04	15	622.04	15	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.04	15	622.04	15	622.05	15	622.06	15	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.06	15	622.04	15	622.06	15	622.04	15	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.14	21	622.06	15	622.04	15	622.00	13	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.29	36	622.06	15	622.04	15	622.00	13	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.14	20	622.04	15	622.04	15	622.04	15	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.12	19	622.04	15	622.00	13	622.02	13	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.07	16	622.00	13	622.04	15	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.10	17	622.24	29	622.00	13	622.06	15	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.22	28	622.54	65	622.00	13	622.04	15	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.10	17	622.31	38	622.00	13	622.04	15	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.24	29	622.20	27	621.97	11	622.06	15	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.20	26	622.14	20	621.97	11	622.04	15	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.12	18	622.08	16	622.00	13	622.06	15	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.04	15	622.02	14	622.04	15	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.04	15	622.04	15	622.04	15	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.10	17	622.06	15	622.08	16	622.06	15	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.12	19	622.04	15	622.08	16	622.08	16	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.04	15	622.06	15	622.08	16	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.04	15	622.12	17	622.08	16	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.12	19	622.06	15	622.20	26	622.08	16	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.20	27	622.10	17	622.04	15	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.22	29	622.08	16	622.10	17	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.12	17	622.04	15	622.16	19	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.04	15	6 2.08	16	622.04	15	622.25	32	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.04	15	622.06	15	622.02	13	622.14	18	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.04	15	622.04	15	622.02	13	622.08	16	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.08	16	622.12	17	622.04	15	622.10	17	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.04	15	622.12	17	623.04	15	622.12	17	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	622.04	15	622.08	16	.....	.....	622.12	17	.....	.....	.....	.....

Daily Gauge Height and Discharge of Boston Creek, near York, for 1913

Drainage area, 123 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.13	16	591.92	7	592.02	11	591.96	8	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.13	16	591.92	7	592.04	12	591.94	8	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.15	16	591.86	6	592.11	15	592.00	10	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.23	19	591.86	6	592.08	14	592.02	11	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.13	16	591.84	6	592.02	11	591.94	8	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.21	18	591.84	6	591.98	9	591.94	8	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.25	20	591.88	7	591.98	9	592.00	10	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.25	20	591.90	7	591.98	9	591.98	9	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.21	18	591.96	8	591.96	8	591.98	9	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.27	22	591.94	8	591.98	9	591.94	8	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.17	17	592.02	11	592.10	15	591.98	9	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.17	17	592.29	25	591.94	8	391.86	5	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.17	17	592.21	18	591.94	8	592.02	13	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.17	17	592.11	15	591.86	6	591.94	8	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.15	16	592.17	17	591.86	6	591.98	9	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.15	16	592.02	11	591.82	5	591.98	9	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.11	15	592.02	11	591.90	7	591.98	9	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.15	16	592.02	11	591.86	6	592.02	11	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.09	14	592.02	11	591.86	6	591.92	7	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.02	11	592.04	12	591.90	7	592.02	11	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	593.04	12	591.98	9	591.94	8	592.10	15	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.06	13	591.98	9	591.98	9	592.10	15	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.04	12	591.98	9	592.02	11	592.10	15	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592.02	11	591.94	8	592.02	11	592.17	17	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	591.98	9	592.02	11	592.00	10	592.27	22	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	591.96	8	592.09	14	592.02	11	592.37	32	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	591.94	8	592.09	14	592.02	11	592.40	35	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	591.98	9	592.02	11	591.94	8	592.33	28	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	591.98	9	592.17	17	591.94	8	592.33	28	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	591.94	8	592.11	15	592.02	11	592.31	26	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	591.92	7	592.04	12	.....	.....	592.31	26	.....	.....	.....	.....

Daily Gauge Height and Discharge of Galt Creek, at Kerr St., Galt, for 1913

Drainage area, 48 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.20	15	893.33	25	893.33	25	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.23	17	893.25	20	893.44	36	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.23	17	893.29	23	893.48	39	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.31	25	893.29	23	893.33	25	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.21	16	893.33	25	893.40	32	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.23	17	893.27	23	893.54	44	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.43	33	893.23	17	893.31	25	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.23	17	893.27	23	893.35	27	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.31	25	893.31	25	893.25	20	893.35	27	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.56	45	893.31	25	893.44	36	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.63	52	893.29	23	893.40	32	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.42	33	893.23	17	893.46	36	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.50	40	893.27	23	893.46	36	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.29	23	893.27	27	893.37	28	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.31	25	893.19	15	893.50	40	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.32	25	893.23	17	893.42	33	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.31	25	893.44	36	893.48	39	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.27	22	863.39	31	893.48	39	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.23	17	893.35	27	893.49	39	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.22	17	893.50	40	893.50	40	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.29	23	893.46	36	893.54	44	893.50	40	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.31	25	893.31	25	893.50	40	893.56	46	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.29	23	893.33	25	893.30	32	893.50	40	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.28	23	893.40	32	893.46	36	893.56	46	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.29	23	893.31	25	893.36	27	893.72	59	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.28	23	893.31	25	893.35	27	893.60	49	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.27	22	893.27	23	893.37	28	893.56	46	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.25	20	893.52	41	893.40	32	893.31	25	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.23	17	893.31	25	893.44	36	893.50	40	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.21	16	893.33	25	893.35	27	893.47	39	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	893.21	16	893.31	25	.....	.....	893.40	32	.....	.....	.....	.....

Daily Gauge Height and Discharge of Whiteman's Creek, near Burford, for 1913

Drainage area, 153 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1													690.82	37										
8																			690.84	37				
12																	690.72	29						
14															690.94	46								
15																			690.83	36				
16																			690.81	35				
17																			690.85	38				
18																			690.85	38				
19																			690.83	36				
20																			690.88	41				
21																			690.96	48				
22																			690.94	46				
23																			690.94	46				
24																			691.00	53				
25																			691.08	61				
26																			691.00	53				
27																			690.88	41				
28																			691.00	53				
29																			691.04	56				
30																			691.02	54				
31																			691.00	53				

Daily Gauge Height and Discharge of Irvin River, at Salem, for 1913

Drainage area, 64 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.84	1	1262.97	2	1262.92	1	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.88	1	1262.97	2	1262.92	1	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.88	1	1262.97	2	1262.92	1	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.90	1	1262.97	2	1262.92	1	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.90	1	1262.97	2	1262.92	1	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.90	1	1262.92	1	1262.92	1	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.90	1	1262.92	1	1262.92	1	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.92	1	1262.92	1	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.90	1	1262.92	1	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.88	1	1262.92	1	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.88	1	1262.92	1	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.88	1	1263.05	2	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.88	1			.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.88	1			.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.88	1			.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			1262.88	1			.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.97	1	1262.88	1			.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.90	1			.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.92	1	1262.97	2			.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.92	1	1263.17 1262.97	3			.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.92	1	1262.97	2			.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.94	1	1262.97	2			.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1263.03	2	1263.05	2			.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1263.01	2	1263.05	2			.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1263.01	2			.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1263.17 1262.99	3	1262.99	2			.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.97	2	1262.97	2			.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.97	2	1262.97	2			.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.97	2	1262.92	1			.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.92	1	1263.01	2	1262.92	1			.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1262.88	1	1263.01	2	1262.92	1			.....	.....	.....	.....

Gauge affected by backwater, elev. varied but little.

Gauge affected by backwater. Now cancelled.

See second gauge for this stream where conditions are normal

El. 1263.35
Dis. 6.93

Monthly discharge of Grand River at York for year 1913

Drainage area, 2,311 square miles.

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth of inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	709	240	477	.31	.10	.21	.24
August	650	183	350	.28	.08	.15	.17
September	455	215	327	.20	.09	.14	.16
October	860	205	419	.37	.09	.18	.21
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	860	188	393	.37	.08	.17	.78

Monthly discharge of Grand River at Glen Morris for year 1913

Drainage area 1,385 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....
August	575	100	249	.42	.07	.18	.21
September	250	100	189	.18	.07	.14	.16
October	540	100	274	.39	.07	.20	.23
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	575	100	237	.42	.07	.17	.60

Monthly Discharge of Grand River at Concession St. Bridge, Galt, for year 1913

Drainage area 1,356 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....
August	340	90	154	.25	.07	.11	.13
September	215	80	129	.16	.06	.10	.11
October	395	95	243	.29	.07	.18	.21
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	395	80	175	.29	.06	.13	.45

Monthly discharge of Grand River at Conestogo for 1913

Drainage area, 538 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....
August	82	10	28	.15	.02	.05	.06
September	43	12	21	.21	.02	.04	.04
October	121	16	46	.22	.03	.09	.10
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	121	10	32	.22	.02	.06	.20

Monthly discharge of Grand River at Belwood for year 1913

Drainage area, 270 square miles

Month.	Discharge in second-feet.			Discharge in second-feet. per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January							
February							
March							
April							
May							
June							
July							
August	9	3	5	.03	.01	.02	.02
September	7	4	5	.03	.01	.02	.02
October	31	5	9	.11	.02	.03	.03
November							
December							
The period	31	3	6	.11	.01	.02	.07

Monthly discharge of Nith River at Canning for year 1913

Drainage area, 386 square miles.

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January							
February							
March							
April							
May							
June							
*July	225	40	145	.58	.10	.38	.44
August	292	73	140	.76	.19	.36	.42
September	193	75	124	.50	.19	.32	.36
October	210	74	150	.54	.19	.39	.45
November							
December							
The period	292	40	140	.76	.10	.36	1.67

* Portion of month only.

Monthly discharge of Speed River, Gordon St. Bridge, Guelph, for year 1913

Drainage area, 193 square miles.

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January							
February							
March							
April							
May							
June							
July							
August	29	5	14	.15	.03	.07	.08
September	29	5	15	.15	.03	.08	.09
October	58	13	25	.30	.07	.07	.08
November							
December							
The period	58	5	18	.30	.03	.09	.25

Monthly discharge of Speed River at Leslie's Bridge, near Guelph, for year 1913

Drainage area 63 square miles.

Month.	Discharge in second-feet			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January							
February							
March							
April							
May							
June							
July							
August	11	4	7	.17	.06	.11	.13
September	15	4	8	.24	.06	.13	.14
October	27	6	13	.43	.10	.21	.24
November							
December							
The period	27	4	9	.43	.06	.14	.51

Monthly discharge of Conestogo River at St. Jacob for year 1913

Drainage area 312 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Meau.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....
August	18	6	9	.06	.02	.03	.03
September	13	6	8	.04	.02	.03	.03
October	158	6	22	.50	.02	.07	.08
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	158	6	13	.50	.02	.04	.14

Monthly discharge of Fairchild's Creek near Onondaga for year 1913

Drainage area, 112 square miles

Month	Discharge in second-feet,			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	36	15	18	.32	.13	.16	.18
August	65	13	19	.58	.12	.17	.20
September	26	11	15	.23	.10	.13	.14
October	32	13	16	.29	.12	.14	.16
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	65	11	17	.58	.10	.15	.69

Monthly discharge of Boston Creek at York for year 1913

Drainage area, 123 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Maximum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	22	7	14	.18	.06	.11	.13
August	25	6	11	.20	.05	.09	.10
September	15	6	9	.12	.05	.07	.08
October	35	5	14	.28	.04	.11	.13
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	35	5	12	.28	.04	.10	.44

Monthly discharge of Galt Creek at Kerr St. Bridge, Galt, for year 1913

Drainage area, 48 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....
August	52	15	26	1.08	.31	.54	.62
September	44	15	27	.92	.31	.56	.62
October	59	25	37	1.23	.52	.77	.89
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	59	15	30	1.23	.31	.62	2.13

Bench Marks on Grand River

Location	Elevation above Lake Erie.	Elevation above mean tide, New York.	Mileage.
B.M. on abut. of Dunnville dam	12.53	586.47	0.00
B.M. on top of 2nd Pier, Road Bridge, Cayuga	21.93	595.87	15.
B.M. on top of 1st Pier, Road Bridge, York	34.26	608.20	22.
B.M. on top of 1st Pier, Road Bridge, Caledonia	51.38	625.32	26.
B.M. on footing 2nd Pier, Cockshutt's Bridge at Brantford.	67.32	641.26	53.
B.M. on footing of left abutment, T. H. & B. Ry. Bridge, Brantford	71.53	645.47	57.
B.M. on top of abutment next to head race of Watson's dam, Brantford	106.86	680.80	60.
B.M. on wing wall upstream side left abutment, Dumfries St. Bridge, Paris	160.57	734.51	68.
B.M. on downstream side, 1st Pier, William St. Bridge, Paris	167.25	741.19	69.
B.M. on left abutment on projecting rock in 2nd course of stone work, G.T.R. Bridge, 2½ miles above Paris	180.90	754.84	71.
B.M. on top of middle pier, downstream side, Glen Morris Bridge, Glen Morris	245.67	819.61	.....
B.M. on top of left abutment, upstream side, road bridge below Galt	275.81	849.75	89.
B.M. on top of downstream corner girder sill of right abutment, G. P. & H. Ry. bridge, Galt	295.68	869.62	82.
B.M. on concrete under muzzle of old cannon opposite Main St., Galt	303.17	877.11	83.
B.M. on floor of bridge at Blair	335.18	909.12	88.
B.M. on top of left pier, upstream side, County Bridge, Freeport	362.69	936.63	94.
B.M. on nose of left pier, G.T.R. Bridge, Breslau	287.28	961.22	101.
B.M. on top of centre pier, downstream side, road bridge, Bridgeport	417.59	991.53	104.
B.M. on top of wing wall of left abutment, downstream side, Conestogo Bridge	463.18	1,037.12	112.
B.M. on top of centre pier, Winterbourne Bridge	474.11	1,048.05	115.
B.M. on top of beam in right hand shore crib of West Montrose Bridge	479.23	1,053.17	117.
B.M. on ledge on corner of left pier, downstream side, road bridge	526.49	1,100.43	123.
B.M. on top of right abutment, road bridge, Elora	649.03	1,222.97	129.
B.M. on s.w. corner west wall of Bissell's head race, Elora.	656.43	1,230.37	129.
B.M. corner of left abutment flour mill dam, Fergus	725.77	1,299.71	133.
B.M. top of right abutment, downstream side, concession five road bridge, one mile below Belwood	785.57	1,359.51	.....
B.M. downstream side, right abutment Belwood Bridge	806.21	1,380.15	.....

Bench Marks on Speed River

Location.	Elevation above Lake Erie.	Elevation above mean tide, New York.	Mileage from mouth
B.M. upper left waste gate of dam, Preston	321.69	895.63	1.30
B.M. on right abutment of right hand road bridge above Preston	335.65	909 59	2.43
B.M. on end of downstream wing wall left abutment of left hand bridge below Hespeler	355.11	929.05	3.65
B.M. on bottom of tie in left span G.T.R. Bridge, Hespeler	375.70	949.64	4.71
B.M. downstream corner right abutment Town road bridge, Hespeler	367.99	941.93	5.00
B.M. on downstream corner left abutment Coles and Sons dam	380.03	953.97	6.78
B.M. on tension rod downstream side road bridge	410.49	984.43	10.56
B.M. on tension rod downstream side road bridge	412.27	986.21	11.72
B.M. right hand downstream corner Gordon St. bridge, Guelph	446.05	1,019.99	15.26
B.M. Corporation of Guelph —			
B.M. No. 72 =	.....	1,016.75	.....
B.M. No. 63 =	.....	1,031.91	.....
B.M. No. 81 =	.....	1,025.10	.....
B.M. on downstream wing wall left abutment road bridge near Simpson's Mill	495.43	1,069.37	17.51
B.M. on upstream side of 1st pier, Leslie's Bridge, above Guelph	544.06	1,118.00	21.81
B.M. on upstream side, sill of right abutment, Caraher's Bridge	560.55	1,134.49	23.65

Bench Marks on Nith River

B.M. on top of 2nd step from bottom of right abutment, Penman's dam, Paris	174.82	748.76	0.75
B.M. on upstream wing wall of left abutment, road bridge at gauging station	245.54	819.48	7.44

DESCRIPTION OF GAUGES ESTABLISHED ON GRAND RIVER AND TRIBUTARIES

Gauge No. 1

On Boston Creek, ¼-mile from the Village of York, on the Concession River Road Bridge, Township of Oneida, County of Haldimand. Zero on gauge 591.00.

Gauge No. 2

On Grand River, East approach of Grand River Bridge, Front Street, Village of York, Township of Seneca, County of Haldimand. Zero on gauge 593.00.

Gauge No. 3

On Fairchild's Creek, 1¾ miles from the Village of Onondaga on the Onondaga Road, 3rd Concession, Township of Onondaga, County of Brant. This bridge is called Howell's Bridge. Zero on gauge 621.00.

Gauge No. 4

On Grand River on the Toronto, Hamilton and Buffalo Railway Bridge, East approach in the City of Brantford, County of Brant. Zero on gauge 643.00.

Gauge No. 5

On the Western Counties Canal on the East side of the new concrete Market Street Bridge, in the City of Brantford, County of Brant. Zero on gauge 650.00.

Gauge No. 6

On Whiteman's Creek on the first bridge above the Junction of the Grand River and Whiteman's Creek, 4¾ miles from the City of Brantford, County of Brant. Zero on gauge 690.00.

Gauge No. 7

On the Grand River on the Dundas Street Bridge in the Town of Paris, County of Brant. Zero on gauge 717.00.

Gauge No. 8

On the Nith River on the 2nd Concession, Lot 2, Township of Blenheim, County of Oxford, 4½ miles from Paris. Zero on gauge 799.00.

Gauge No. 9

On the Grand River on the Glenmorris Bridge in the Village of Glenmorris, 6th Concession, Township of South Dumfries, County of Brant. Zero on gauge 801.00.

Gauge No. 10

On the Grand River on the Concession Street Bridge, in the Town of Galt, County of Waterloo. Zero on gauge 851.00.

Gauge No. 11

On the Galt Creek on the Kerr Street Bridge in the Town of Galt, County of Waterloo. Zero on gauge 893.00.

Gauge No. 12

On the Speed River on the gaol wall adjoining the power house in the Town of Hespeler. Zero on gauge 935.00.

Gauge No. 13

On the Speed and Eramosa Rivers on the Gordon Street Bridge in the City of Guelph. Zero on gauge 1005.00.

Gauge No. 14

On the Grand River on the Grand River Bridge in the Village of Conestogo. Zero on gauge 1017.00.

Gauge No. 15

On the Conestogo River on the St. Jacob's Bridge, in the Village of St. Jacob's, in the Township of Woolwich, County of Waterloo. Zero on gauge 1057.00.

Gauge No. 16

On the Speed River above the Junction of the Speed and Eramosa Rivers on Caraher's Bridge on the Eramosa Road, 3¾ miles from the City of Guelph. Zero on gauge 1126.00.

Gauge No. 17

On the Irvin River on Watt's Bridge on the blind line between the 11th and 12th Concession, Lot 14, Township of Nichol, County of Wellington. Zero on gauge 1297.00.

Gauge No. 18

On the Grand River on the Belwood Bridge in the Village of Belwood on the 7th Concession, Township of Garafraxa, County of Wellington. Zero on gauge 1366.00.

STORAGE POSSIBILITIES OF THE WATERSHED TRIBUTARY TO RAINY LAKE

Manitou Lakes

The drainage area of these lakes is about 446 sq. miles, and the area of the lakes themselves is about 66 sq. miles.

A storage draft of 7 feet off these lakes would provide approximately 13,000 million cubic feet of storage, which would probably be more than sufficient to control the entire mean annual run-off of the tributary watershed.

At present there is a Government dam at the foot of the lower lake that would hold a storage head of 9.9 feet if it were in good condition.

The shores of the lake are for the most part rock with large patches of good jack pine here and there, but this is all well up from the lake. The present dam did practically no damage to timber, and the damage caused by a dam that would raise the water 3 ft. higher than at present would be very small.

The sill of the log chute of the present dam is sufficiently low to let the water run as low as the controlling ledge at Cedar Rapids which is above the dam.

The present dam had the stop-logs in when the dam was inspected, but it was leaking about 150 second feet, partly through and partly underneath.

A cross section parallel and similar to the one taken exists 50 feet below the present dam.

No building sand was observed on this lake.

The buildings around the lake are high enough to permit of a rise of 3 feet above high water mark. These are only log shacks, not used at present.

The present dam is not built on solid rock, but the banks of the river are solid rock with large boulders and gravel bottom in the river bed.

The lumbermen who remembered this dam from its installation had never known the lake to be filled to the top of the dam.

Otukamamawan Lake

The drainage area of the lake above a possible dam site is about 500 sq. miles, and the area of lake surface above this site is about 18 sq. miles.

A dam at this point holding 30 ft. of water on the sills would impound a run-off of 12 inches from the tributary watershed. This figure is probably greater than the actual mean annual run-off.

There is evidence at the outlet of the lake to show that there existed at one time a small dam probably holding a two to three foot head of water, but no impounding action is caused by the fragments which now remain.

A cross-section of the river at a point in the rocky narrows above the old dam is attached hereto. The foundations at this point are all solid rock. It will be noticed from the profile that there is a controlling rock ledge at the outlet which is only 1.5 feet below present water level, and which would necessitate keeping all the storage head above this level unless the ledge was blown out.

There is sand of good quality on the shores of the lake at various points and also gravel, but the surface gravel is not free from dirt.

The shores of the lake have as a general rule steep slopes and in many places are precipitous, but there is nevertheless some good pine of tie size and larger that would suffer damage by flooding. This is confined, however, to a very narrow strip parallel to the water line.

The map used of this lake shows all the islands as far as could be judged except the very small ones.

This lake is sometimes called Trout Lake.

A 30 ft. rise in level on this lake would add very little to its area.

Lac Des Milles Lacs

The drainage area of this lake is about 620 sq. miles, and the area of the lake surface is 90 sq. miles.

Assuming 4 feet of storage draft available through raising the level and deepening the outlet, this lake would have an impounding capacity of about 10,000 million cubic feet. This volume of storage would be provided by a mean annual run-off of 7 inches from the tributary watershed.

The raising of the level of this lake to any great extent will drown large tracts of muskeg, but without serious damage to timber, most of the low lying timber being tamarac, which is still alive but not liable to damage by flooding. The valuable timber on the lake stands sufficiently high to be outside of any possible flooded area.

The lumber camps on the lake are of no value.

Damage to property by raising the level of this lake would occur at two places:—

(1) *Hogans' Mill.*

Hogan Brothers, of Savanne, are the owners of most of the timber limits on the lake and are the proprietors of a large sawmill on the lake shore two miles west of Savanne Station, on the C. P. R. The sawmill is fully equipped with a complete outfit for lumber, lath and shingles, and is connected by a mile spur line to the C. P. R., besides having more than a half mile of track through the piling yard. There is a bush road from Hogans' Mills to Savanne.

An increase of 3.5 feet over the present level of the lake would not damage the mill. Any higher level than this would affect the boiler room of the mill and also the piling yard track, and a 500 foot wharf and storehouse.

The other buildings, residences, storehouses, offices, etc., belonging to the mill are all between ten and twelve feet above the level of the lake.

(2) *At Savanne.*

Taking the level of the lake as 100, the elevations of buildings and railway at Savanne are given below:—

C.P.R. Bridge over Creek	Base of rail = 110.9.
	Bottom of girder = 107.7.
F. Edward's store and Post Office	Floor El. = 105.0.
	Cellar Floor El. = 101.0.
	Floor of Warehouse El. = 103.0.
	2 Barns = 103.0.
Ice House	El. of Floor = 102.5.
Station Lavatories	El. of Floor = 103.0.
Other C.P.R. buildings—station, tool houses, section house, etc.	El. of Floors = 108-110.
Road Bridge, 150 feet long	El. of Floor = 103.8.
C.P.R. track, 1 mile each side of the river to rising grade	Base of Rail = 110.9.
Six frame and log houses	El. of Floors = 104-105.
One log house south of C.P.R. track	El. of Floor = 104.5.

The above list includes all the habitable or used buildings at Savanne.

The buildings on the Indian Reserve are all above any possible flood level.

The residents at Savanne state that the river level varies a foot in elevation with changes in the wind.

Some of the above-mentioned houses have cellars which are at present below the ordinary spring flood level.

The muskeg surrounding that branch of the river passing under the C. P. R. bridge extends two and a half miles north of the C. P. R. at an elevation of 2 feet to 3 feet above the present level of the lake.

White Otter or Big Clearwater Lake

The drainage area of this lake above the present dam is about 320 sq. miles, and the area of lake area above the dam is about 50 sq. miles. With 7 feet of storage draft on this lake there would probably be more than sufficient capacity to impound the mean annual run-off of the tributary watershed.

Within the last two years a dam has been erected at the outlet of this lake capable of holding at least 7 feet of water on the sills, but a controlling ledge of rock in the outlet just above the dam makes it doubtful if the lake could be drained as low as the sill.

The timber on this lake is practically all above any damage from flood water.

There are a few old lumber camps on the lake, but these are also above any possible storage level.

There is a gully not far from the present dam that would permit the water to flow out before the water would rise to the crest of the present dam.

There are several low places above the present dam without timber which would be flooded, but high ground is close in every case.

East Clearwater Lake

The drainage area of the lake is about 75 sq. miles, and the area of the lake surface above the outlet is about 12.4 sq. miles.

There is a storage dam at present at the lake which was built at the time of the installation of the power plant of the Hammond Reef Mine some thousand feet below the dam.

The dam is in good condition, though the sluice gate screw block is damaged and the gate has to be levered up and down. The dam is built of stone-filled cribs and well backed with dry masonry, all on rock foundations. The sluice gate is a single steel plate, braced with angle steel and was operated by a screw block above the gate.

The extreme high water-mark is below the level of the top of the dam, which has more than sufficient capacity to hold all the water delivered to the lake.

The shores of the lake are steep sloping rock with no good timber at all near the water line.

MUSKOKA RIVER STORAGE

General Conditions

The watershed of the North Branch of the Muskoka River lies in the districts of Muskoka, Parry Sound and Nipissing, and covers an area of about 560 sq. miles above Port Sydney.

Until recently, the paramount industry in this territory has been lumbering, and for many years the North Branch has been used for the transportation of saw-logs.

Under ordinary conditions, log-driving seriously hampers power development, but a peculiar feature of the situation as regards the Muskoka River is that injury is now being caused not through the activity of the lumbermen, but through the *cessation* of their operations in the upper watershed. This is due to the nature and location of the lake areas.

In the lower portion of the watershed is a group of four large lakes, all but one practically on the same level. In the upper watershed is a large number of small lakes, which have in the past been controlled by lumbermen's dams. When lumbering operations were at their height, large quantities of water were held in these upper lakes, and they were flushed out more or less in succession in bringing drives down the main river and out of tributary streams. The water thus liberated discharged into the group of larger lakes above mentioned, and through their capacity for storage they reduced and equalized the various flood peaks, and discharged them more gradually into the lower river. As the lumbering industry waned, the quantity of water stored in the upper lakes was reduced, and the dams began to suffer from lack of maintenance, the result being that an increasing proportion of the spring run-off discharged naturally into the lower basin, and drained off in the early part of the summer.

The result has been that, while power has been developed upon the river on the basis of a minimum flow which existed 10 years ago, the minimum flow during the last three or four years has dropped as low as 120 second feet at High Falls, or less than half the flow which was ordinarily supposed to obtain 10 years previous. A large part of the capital invested has on this account become unproductive, and long and frequent periods of inadequate service have caused much trouble and inconvenience, as well as a serious loss of revenue.

The object of the investigation is to determine to what extent artificial storage can be used to improve present conditions.

Lumbering

The oldest established industry in the Muskoka River watershed is lumbering, but owing to the fact that practically all the pine has been cut, the waters of the North Branch are now very little used for driving purposes, and in two or three years' time, the use of the waters for this purpose will practically cease. For this reason, it dees not seem necessary to consider the lumbering interest in connection with any scheme having as its object the improvement of flow conditions on the North Branch of the Muskoka River.

Navigation

The navigation interests in the watershed of the North Branch are mainly represented by the Huntsville & Lake of Bays Navigation Co. This company operates boats out of Huntsville, upon Fairy, Mary and Peninsula Lakes, and the connecting channels. The business of the company on these lakes is confined

almost exclusively to the handling of local tourist traffic and through tourist traffic to the Lake of Bays. Open navigation exists between Huntsville and Peninsula Lake. and connection with Mary Lake is made by means of a lock.

Several passenger steamers are kept in commission during the tourist season. The largest boat on the Huntsville-Portage route is 125 feet long, 22 ft. beam and has a maximum draft of about 7 feet. The largest boat on the Mary Lake route has a maximum draft of 6 feet, and has a length and beam specially adjusted for the dimensions of the lock.

As to the commercial use which may in future be made of these waters for navigation purposes, it would seem that the limit of their utility would be the bearing of a tourist traffic not very greatly in excess of that now existing. This opinion may be justified on the following grounds.

(1) That the cutting out of the pine timber has destroyed any lake commerce that has previously existed in connection with the lumber industry.

(2) That the desertion of farms in the townships bordering on these lakes indicates that they will be used less in the future, in connection with the commercial needs of agriculture, than they have been in the past.

(3) That the continual opening up of new tourist districts by the railways will tend to check any abnormal expansion of the tourist traffic out of Huntsville.

It will be assumed, therefore, that the requirements of navigation will be adequately met by providing for the permanent accommodation of boats similar to those now operating.

The minimum depth of channel between Huntsville and the Portage will, therefore, be 8 feet, and 7 feet between Fairy Lake and Port Sydney.

Power

In the year 1892, the Town of Bracebridge puts its No. 1 Hydraulic plant in operation in the Muskoka River, a 16 foot head being developed for lighting load only. This plant is now used exclusively for municipal pumping.

In 1901, plant No. 2 was built, and a 250 kw. unit installed. In 1908 it was found necessary to add a 300 kw. unit.

In 1909, the growing demand for power led to the building of No. 3 plant at Wilson's Falls. This site is now developed to full capacity, 600 kw. being installed.

At the present time, the town has over 2,000 h.p. of wheel capacity installed, and a continuous market demand of 1,500 to 1,800 h.p. Under the low water conditions which have obtained during recent years, about 25 per cent. only of this installed capacity has been capable of use, and for weeks at a time the town has been obliged to carry a commercial load of 1,800 h.p. with a maximum plant output of about 550 h.p.

It is quite evident that the continued occurrence of these periods of power shortage would ultimately ruin the municipal system, as manufacturers would be forced to install a more dependable type of motive power.

In view of the above, it is unnecessary to emphasize the urgent need of improving the flow characteristics of the North Branch of the Muskoka River. The obvious means of effecting such improvement is by the storage of surplus run-off in the navigable lakes, or in the smaller lakes of the upper watershed.

Storage Possibilities

The choice of initial storage development lies between the group of four navigable lakes above Port Sydney, and a larger number of very much smaller lakes on the upper watershed above Lake Vernon.

As regards the latter, the complete development of the larger lakes would provide approximately 60,000 acre feet of storage. To obtain this, it would be necessary to repair and maintain seven to ten timber dams. Owing to the small storage capacity of the individual basins, more or less constant attention would be necessary for proper operation, and the inaccessible location of most of these basins would be detrimental to operation, both as regards cost and efficiency.

Another disadvantage consists in the fact that stored water from the upper system of lakes must pass through and be partially absorbed by the large lakes above Port Sydney. The influence of wind and temperature on these lakes will make it impossible to foretell with any degree of accuracy what effect the flushing out of a basin would have on the regimen of the lower river, or in what time the effect would become noticeable.

The obvious solution of this latter difficulty is, of course, to use the navigable lakes as auxiliary storage basins. This has actually been done through the agency of the Government dam at Port Sydney.

Having established the fact that the navigable lakes must in any case be used to some extent in connection with any storage scheme that may be devised, the question arises as to whether the storage of these lakes could be developed sufficiently to dispense altogether, or in part, with the necessity of developing the upper system.

The combined area of the four lakes involved is such that about 10,000 acre feet of storage is available for each foot of rise. The importance of obtaining the maximum possible range of variation in level is therefore evident, and the whole point at issue is to determine a range of variation which will, on the one hand, cause no extensive damage by flooding, and, on the other, permit minimum navigable levels to be permanently maintained.

Results of Surveys

The investigations of this problem necessitated the making of surveys covering:—

(1) A new site for a dam at Port Sydney.

(2) Flood contours around Mary Lake.

(3) Survey, with soundings of:—

- (*a*) Channel between Lake Vernon and Fairy Lake.
- (*b*) Channel between Fairy Lake and Peninsula Lake.
- (*c*) Channel between Fairy Lake and the Lock.
- (*d*) Channel between the Lock and Mary Lake.

These surveys were of service in reaching certain conclusions which may be summarized as follows:—

(1) That the maximum regulated level of Mary Lake could be held 3 feet above the ice level which obtained at the time of the survey, without causing undue damage.

(2) That the maximum regulated level above the Lock should be held at, or slightly below, high water level, corresponding to about 8.5 feet on the upper sill of the present lock.

(3) That a 3 foot variation of level above the lock, during the navigation season, will not injuriously affect navigation or riparian owners.

(4) That a 4 foot variation of level below the Lock during the navigation season will not injuriously affect navigation, and will not cause serious injury to riparian owners.

New Construction and Improvements

The existing dam at Port Sydney is a wooden structure built by the Provincial Government for maintaining navigation between Port Sydney and the Lock. This dam now requires to be replaced, and, in the interests of economy and efficiency, a permanent structure should be built.

The Lock between Mary and Fairy Lakes is in a dilapidated condition, as is also the dam. The useful life of the dam might be prolonged by extensive repairs, but the lock requires to be entirely rebuilt. All new construction at this point, whether lock or dam, or both, should be permanent.

In the narrow channels between the lakes, the back-wash of the boats cuts away the banks, and the consequent silting up of the navigable channels necessitates frequent dredging. This silting action could be effectively stopped by pile sheeting the exposed sections. The whole length of the channel between Fairy and Peninsula Lakes should be treated in this way, and also certain portions of the channel between the Lock and Mary Lake.

All of the above new construction is required in the interests of navigation, and any additional features of design in connection with these structures, which might be necessary in order to adapt them for storage regulation, would be insignificant from a cost standpoint.

The surveys also indicated that the storage capacity of the lakes above Port Sydney could be economically increased by deepening some of the connecting channels between the lakes. This work would of course be to a large extent chargeable to storage.

Details of General Scheme

The projected general scheme of improvement is shown on the sketch profile hereto attached.

The dam at Port Sydney is to be designed so as to enable the levels of Mary Lake to be held between El. 23 and El. 27 during the navigation season, and to allow for an additional drop of two feet during the fall and winter.

The bottom of the navigable channel between Mary Lake and the Lock has been set at El. 16. Inspection of the large scale plans of Sections D. and E. indicates that a small amount of excavation may be necessary through the sand-bar at the mouth of the river. Some soft dredging will also be required just below the lock.

At the Lock, it is proposed to drop the lower guard sill to El. 15, and the mitre sill to El. 14. The upper guard sill is dropped to El. 23, and the mitre sill to El. 22. There will thus be 8 feet of water on the lock sills under the minimum projected summer level.

With a tight permanent dam at Port Sydney, a permanent dam at the Lock is not absolutely necessary, and present requirements will be met if the latter is repaired and alterations made which will enable it to hold the level above the Lock within the extreme limits of variation shown on the sketch profile, namely, E1. 34 maximum, and E1. 29 minimum.

The large scale plan of Section C. shows that for a bottom elevation of 24, no dredging or other improvement of the navigable channel will be necessary.

The general scheme, as described up to this point, provides for a navigable channel 60 feet wide, with a minimum depth of 7 feet, between Fairy Lake and Port Sydney, with 8 feet minimum on the guard sills of the Lock, so that an 8 foot channel could be provided in the future by dredging.

Apart from the general statement made above, as to the ultimate requirements of navigation, no definite recommendations are made regarding the dimensions of the proposed new lock. In this connection however, it may be pointed out that the present lock has ample dimensions to accommodate present traffic. If the lock were enlarged to accommodate the largest boat of the Navigation Co., probably all of the Mary Lake traffic could be handled by one boat making one round trip per day, or, at most, two, during the height of the tourist season. The enlargement of the lock, therefore, would not benefit the district as a whole, but would simply enable the Navigation Co. to handle all the Mary Lake traffic with one large boat, using the lock two to four times per day, for three months of the year, as against a use of four to eight times per day with a lock of present dimensions and smaller boats.

The large scale plans of Sections A and B indicate the extent of improvement necessary to provide a 60 foot channel having a minimum depth of 8 feet between Huntsville and the Portage.

The plan of Section A, Huntsville to Fairy Lake, shows that the amount of dredging is insignificant.

The plan of Section B, Fairy Lake to Peninsula Lake, shows that the present dredged channel will require deepening from end to end, the cut, however, being very light, averaging little over one foot.

Storage Capacity and Results

The adoption of the above described scheme would make 3 feet of draft available in summer, and 2 feet additional in winter, upon Vernon, Fairy and Peninsula Lakes, making in all 5 feet of draft available.

Under similar conditions, 4 feet of draft will be available on Mary Lake during the navigation season, and 2 feet additional in the winter, making 6 feet available in all.

The combined area of Vernon, Fairy and Peninsula Lakes, is about 7,600 acres. The area of Mary Lake is about 2,600 acres.

On the basis of the above figures for area and storage draft, the four lakes in question would provide 32,800 acre-feet of storage during the navigation season.

The benefit to be derived from this volume of storage will be proportional to the length of the low water season, which will vary from year to year. The continuous supply from storage alone, for seasons of various lengths, would be as follows:—

107	days from	July 17	to Oct. 31	.....155 second feet
92	"	Aug. 1	to Oct. 31	.....179 "
76	"	Aug. 1	to Oct. 15	.....210 "
61	"	Aug. 1	to Oct. 1	.....271 "

Under the worst possible conditions that could be imagined the watershed of the Muskoka River above Port Sydney should produce a natural minimum run-off of one-tenth of a second-foot per square mile of watershed. This would mean a natural low water discharge of 56 sec. ft. at Port Sydney.

If the flow from storage under various conditions be superimposed upon this natural discharge, the figures given above will become 211, 235, 274 and 327 sec. ft. respectively. These latter figures fairly cover the range of benefit to be derived from the utilization, during the navigation season, of 32,800 acre-feet of storage on Vernon, Fairy, Peninsula and Mary Lakes.

As to winter storage, it has been assumed that 2 ft. additional could be drawn off the lakes after the close of navigation. Assuming no fall replenishment, there would be 20,200 acre-feet of storage available, to meet low water conditions during the winter. Two months' use of winter storage would probably cover the worst condition; say from Jan. 15 to March 15. Over this period, the above specified volume of storage would provide a continuous flow of 169 sec. ft., which, superimposed upon a natural minimum of 56 sec. ft., would mean a continuous supply of 225 sec. ft. under the worst winter conditions to be anticipated.

Land Damages and Navigation

On the basis of the limits of draft above prescribed, the use of the navigable lakes above Port Sydney for storage purposes will cause no appreciable injury to navigation, and only such inconvenience as may be caused at wharves and landing stages by the proposed 3 to 4 foot variation of level.

The summer cottages on the shores of the various lakes constitute the principal item in connection with land damages. The proposed maximum regulated level of the upper lakes is less than one foot above the ice level of the winter of 1913, and the minimum regulated summer level is to be about 2 feet below ice level. This range of variation is probably much less than that which would obtain under natural conditions, so that the proposed scheme of regulation should be beneficial as far as the upper lakes are concerned, and no damages should accrue.

In the case of Mary Lake, the proposed maximum regulated level is about 3 feet above the ice level of 1913, and the summer minimum about one foot below. There are several points on the shore of Mary Lake where damage may be caused by the maintenance of the projected maximum level.

The present intake of the Smith Mill at Port Sydney should be torn out, and a new one built as part of the proposed new dam. The only justifiable claim for compensation in this regard would be in connection with the land necessary for the extension of the dam, and possibly for a small amount of flooding above the same.

Conclusion

In the event of the projected scheme being approved, but full completion of the work not authorized, the different items should be handled in order of their importance, as follows:—

(1) The building of a new dam at Port Sydney.

(2) The building of a new lock between Mary and Fairy Lakes.

(3) The building of a new dam at the lock or the repair of the present one.

(4) Deepening of channel and shore protection between Fairy and Peninsula Lakes.

(5) Deepening of channel and shore protection between the Lock and Mary Lake.

Assuming that the scheme as outlined is feasible, its superiority over any scheme involving the small lakes in the upper watershed is entirely obvious. The outstanding points of advantage are, first, the greater accessibility of the works, and, second, the vastly greater degree of precision with which the flow can be regulated, if properly designed works are placed at the Lock and at Port Sydney. The facilities thus afforded for efficient regulation would more than offset any advantage the upper lakes might have as regards aggregate storage capacity.

The complete development of the storage of the lower lakes will also allow the storage of the upper lakes to be properly utilized at very small cost, should the necessity arise. It would simply be necessary, in this case, to keep the wooden dams in a fair state of repair, and to flush out the various small lakes in rotation whenever the stage of the lower lakes was such as to permit the reception of the additional supply.

The cost of operating and maintaining the upper system under such circumstances would be comparatively insignificant.

In conclusion it may be noted that the development of artificial storage for power purposes on navigable lakes is not by any means a new idea. The navigable lakes on the Trent and Rideau systems have been used for storage purposes for years, and the range of level variation which obtains on the navigable lakes included in both of these systems is much greater than that contemplated in the case under discussion. Furthermore, in the case of the Trent Canal a through navigation route is involved, where the interests of shipping will be of vastly greater importance as compared to those of power than they can ever hope to be on the lakes above Port Sydney.

Toronto, Oct. 31, 1913.

SEVERN RIVER

The drainage area of the Severn River above the power site at Wasdell's Falls is about 2,080 sq. miles. About 700 sq. miles of this area is included in the watershed of the Black River, which joins the Severn about midway between Wasdell's Falls and the outlet of Lake Simcoe at Washago. The maximum flow at Wasdell's Falls, as so far ascertained from gauge records and discharge measurements, is 9,000 second-feet or 4.32 second-feet per square mile of watershed. Under conditions that will obtain in the future, it is probable that the maximum discharge will never exceed 5 sec. ft. per square mile, this low figure being due mainly to the potent regulating influence of Lake Simcoe, and to a small extent to the smaller lakes in the upper watershed.

The extreme minimum flow, during the period that the river has been under observation by the Commission, was 260 sec. feet, or .125 second-feet per square mile. The average flow for the period from October 1, 1912, to Nov. 1, 1913, was 2,850 second-feet, or 1.37 second-feet per square mile. This was one of the driest periods on record, so that the above is a fair indication of the minimum value of mean annual flow. On this basis the ratio of maximum to average flow is approximately as 3 to 1.

The area of Lake Simcoe is about 297 square miles, and when the Severn section of the Trent Canal is constructed the lake will be completely controlled by regulating dams at Washago. An annual storage draft of 18 inches may then reasonably be considered available, in which event the volume of available storage will be 12,420 million cubic feet or 284,500 acre-feet.

The plant at Wasdell's Falls is designed for a peak capacity of 1,200 h.p. The Trent Canal works are designed to hold the tail-water level at elevation 698, and with the proposed head-water level of elevation 712.5, about 950 second-feet of flow will be required to carry the peak load. On a 75 per cent. power factor basis the average flow will therefore require to be 700 second-feet.

The available volume of storage above specified will provide the required average flow for 207 days in each year. Leaving an ample margin for unavoidable waste and inefficiency of operation, it is therefore evident that a sufficient supply of water may be anticipated at all times.

The Black River, being deficient in natural storage capacity, is very flashy and the peak in evidence on the attached daily discharge curve is mainly due to the sudden rise of the Black River in the spring. In spite of this, the curve shows that the regimen of the river is better than the average. An example of the other extreme is shown in the case of the Maitland River hydrograph. This river lacks natural storage capacity to an unusual degree, and a comparison of the two curves serves to illustrate most admirably the great influence exercised by natural storage upon the regimen of a stream.

Daily Gauge Height and Discharge of Severn River, at Severn Bridge, for 1913

Drainage area, 2,075 square miles

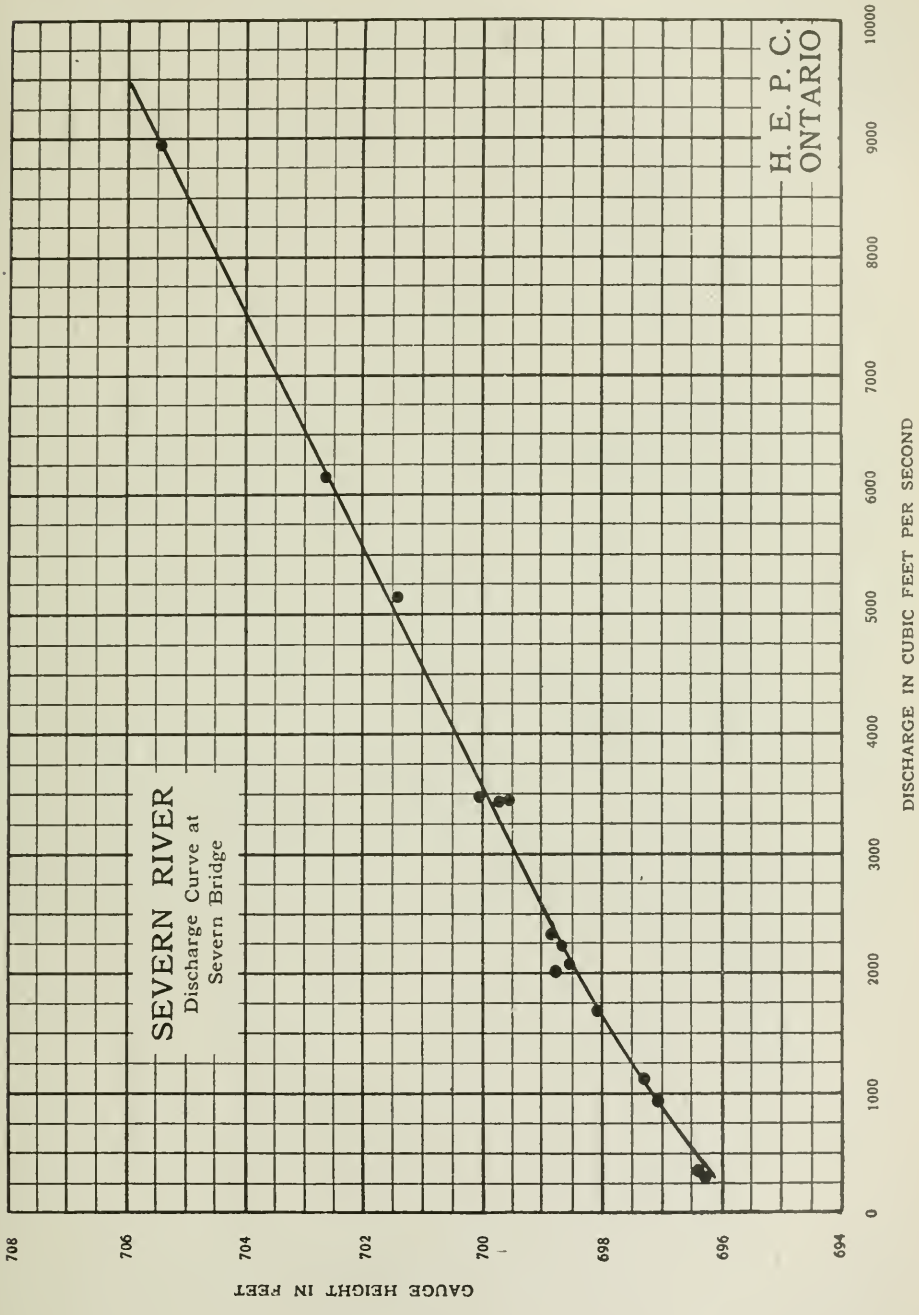
Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	*8725	701.93	5525	699.80	3375	698.62	2200	697.31	1075	697.22	1010	696.81	740	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	*8670	701.87	5450	699.74	3325	698.58	2150	697.16	950	697.26	1025	696.81	740	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	*8600	701.73	5300	699.64	3225	698,47	2025	697,07	900	697.26	1025	696.81	740	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	*8900	701.60	5175	699.58	3175	698.41	1975	697.03	875	697.26	1025	696.89	790	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	705.47	9050	701.50	5075	699.45	3050	698.32	1900	696.95	825	697.26	1025	696.89	790	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	705.39	8950	701.39	4975	699.51	3100	698.24	1825	696.93	810	697.24	1020	696.89	790	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	705.31	8900	701.22	4800	699.51	3100	698.26	1850	696.90	800	697.22	1010	697.05	875	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	705.28	8850	701.05	4625	699.45	3050	698.22	1810	696.95	825	697.13	945	697.05	875	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	705.12	8600	700.89	4475	699.37	2950	698.14	1750	697.00	850	697.06	890	697.05	875	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	705.07	8625	700.76	4350	699.26	2850	698.07	1675	697.01	750	696.99	845	697.05	875	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	705.09	8650	700.74	4325	699.22	2800	697.99	1625	697.01	855	696.97	835	696.99	845	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	705.05	8600	700.59	4175	699.16	2750	697.99	1625	697.01	855	696.95	825	696.93	810	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	704.93	8500	700.55	4150	699.08	2650	697.99	1625	697.05	875	696.93	810	696.59	590	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	704.80	8375	700.51	4125	698.93	2525	697.95	1600	697.07	900	696.85	760	696.59	590	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	704.66	8225	700.45	4050	698.88	2475	697.93	1575	697.09	925	696.76	700	696.47	525	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	704.61	8175	700.34	3950	698.80	2375	697.86	1500	697.14	950	696.85	760	696.28	410	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	704.43	8000	700.34	3950	698.76	2325	697.93	1575	696.18	990	696.76	700	696.18	370	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	704.30	7875	700.34	3950	698.71	2275	697.99	1625	697.18	990	696.76	700	696.26	400	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	704.16	7725	700.32	3925	698.87	2450	697.99	1625	697.18	990	696.76	700	696.11	315	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	703.93	7500	700.14	3750	698.82	2400	697.95	1600	697.18	990	696.76	700	696.15	350	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	703.64	7225	700.10	3700	698.87	2450	697.93	1575	697.18	990	696.76	700	696.11	315	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	703.49	7075	700.12	3725	698.97	2560	697.91	1550	697.18	990	696.76	700	695.99	275	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	703.30	6900	700.10	3700	698.91	2500	697.86	1500	697.18	990	696.85	760	695.97	260	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	703.03	6600	700.10	3700	698.87	2450	697.80	1450	697.20	1000	696.76	700	696.05	285	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	703.78	7350	700.10	3700	698.87	2450	697.89	1525	697.18	990	696.76	700	695.97	260	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	702.41	6000	700.03	3625	698.91	2500	697.84	1475	697.18	990	696.76	700	696.05	285	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	702.30	5900	699.95	3550	698.85	2425	697.81	1460	697.18	990	696.76	700	696.42	500	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	702.22	5800	699.86	3450	698.82	2400	697.76	1425	697.18	990	696.76	700	696.50	550	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	702.07	5650	699.84	3425	698.76	2325	697.76	1425	697.20	1000	696.81	740	696.50	550	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	702.01	5600	699.80	3375	698.66	2225	697.58	1285	697.22	1010	696.85	760	696.50	550	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	699.80	3375	.....	.....	697.45	1175	697.26	1025	.....	.....	.696.50	550	.....	.....	.....	.....

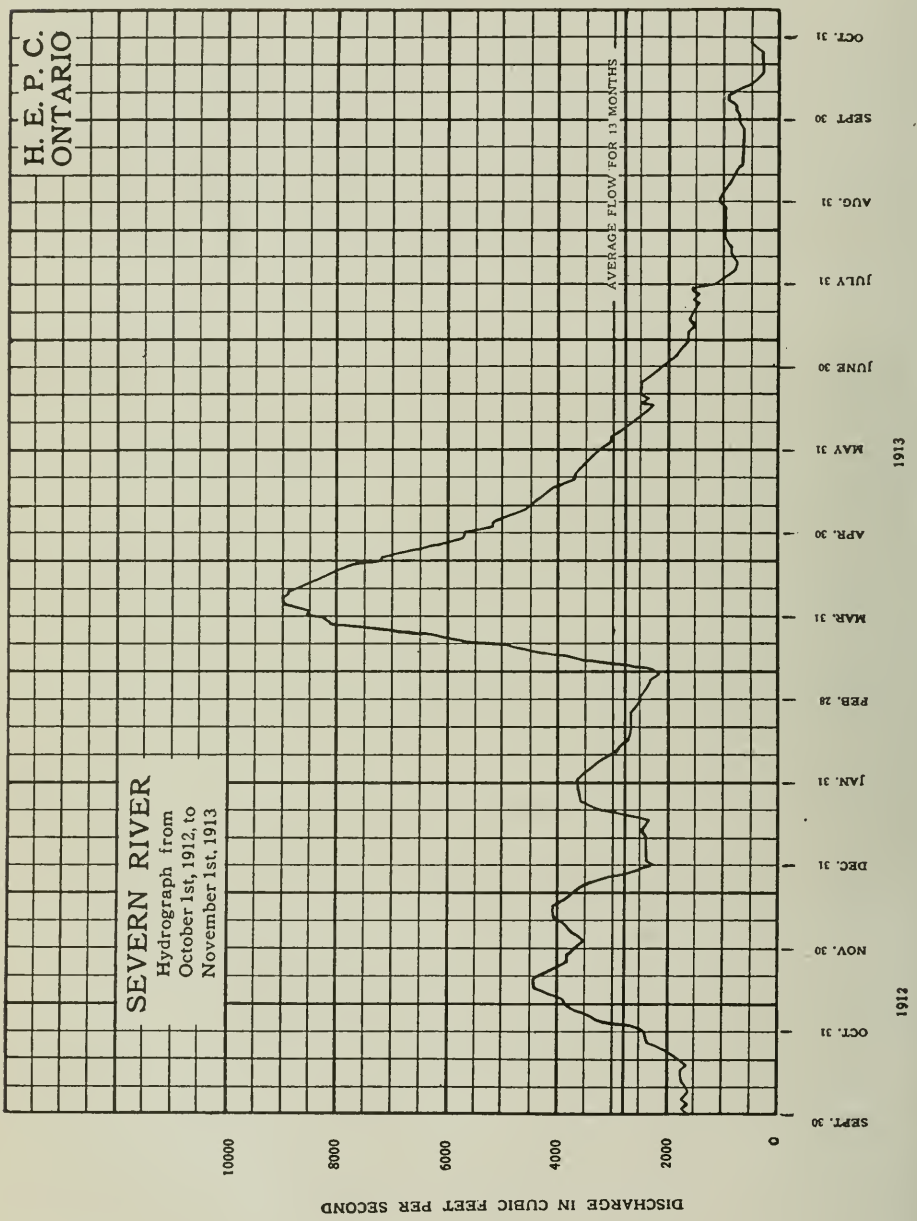
* Estimated.

Monthly discharge of Severn River at Severn Bridge for year 1913

Drainage area, 2,075 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	9,050	5,600	7,790	4.36	2.70	3.76	4.20
May	5,525	3,375	4,175	2.66	1.63	2.01	2.32
June	3,375	2,225	2,680	1.63	1.07	1.29	1.44
July	2,200	1,175	1,644	1.06	.57	.79	.91
August	1,075	800	937	.52	.39	.45	.52
September	1,025	700	815	.49	.34	.39	.43
October	875	260	570	.42	.13	.27	.31
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	9,050	260	2,659	4.36	.13	1.28	10.13


SEVERN RIVER
Discharge Curve at
Severn Bridge
H. E. P. C.
ONTARIO
GAUGE HEIGHT IN FEET
708
706
704
702
700
698
696
694
DISCHARGE IN CUBIC FEET PER SECOND
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


H. E. P. C.
ONTARIO
SEVERN RIVER
Hydrograph from
October 1st, 1912, to
November 1st, 1913
AVERAGE FLOW FOR 13 MONTHS
DISCHARGE IN CUBIC FEET PER SECOND
10000
8000
6000
4000
2000
0
SEPT. 30
OCT. 31
NOV. 30
DEC. 31
JAN. 31
FEB. 28
MAR. 31
APR. 30
MAY 31
JUNE 30
JULY 31
AUG. 31
SEPT. 30
OCT. 31
1912
1913

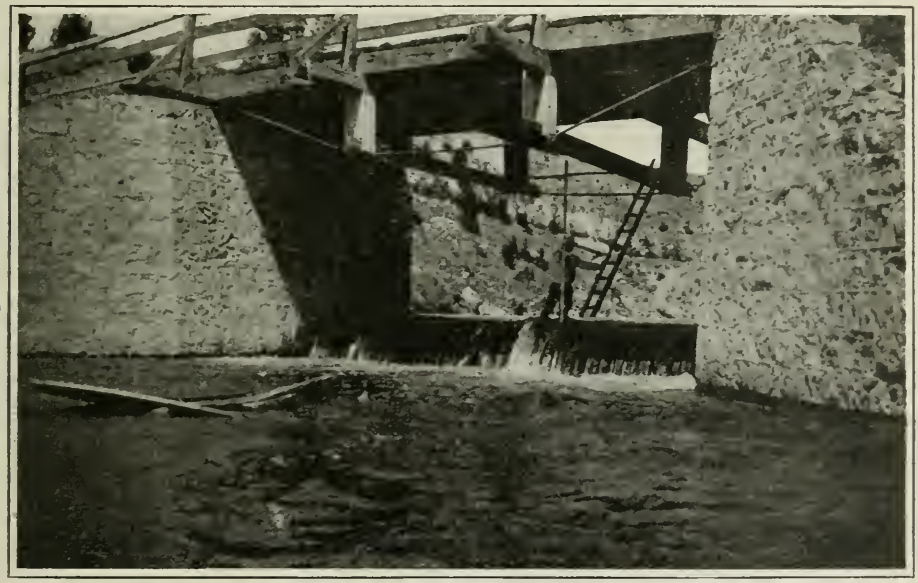
BEAVER RIVER

The proposed hydro-electric development for the supply of power for Owen Sound, and the neighboring district, will be located at Eugenia Falls on the Beaver River.

By the construction of a dam to conserve the flow of the stream, a gross head of 520 feet can be obtained.

A report on the power possibilities of the Beaver River was made in the Third and Fourth Annual Reports of the Commission, page 190. Some additional information regarding the hydrology of the Beaver River at Eugenia is presented herewith.

The data from which the following results were derived are weir records of the flow of the Beaver River at Eugenia for the year ending June 30th, 1911.



Measuring Weir—Eugenia

From the daily readings of the gauge height at the weir, the daily discharges of the river were computed, and these results are used in the following analysis.

To compute the amount of yield of the watershed from this series of gaugings, and to determine the volume of reservoir storage required to store the flood waters in order that any constant rate of flow may be maintained, the mass curve method has been used.

This method consists of totaling the daily discharges of the watershed from day to day for the whole period, which quantities are then plotted as an irregular line, or "mass curve." Any desired rate of draft may then be assumed, and the amounts necessary at different times plotted to the same scale. If a uniform rate, this draft curve forms a straight inclined line, and if it is made to start coincident with some point or summit on the "mass curve," the ordinate between the two curves at any point serves to show the volume of storage that would be required at this date to have maintained the required rate of draft up to that time.

The mass curve, plotted as above outlined, for the period of June, 1910-June, 1911, gives the reservoir capacities necessary to insure certain uniform rates of flow, beginning with 23 cubic feet per second, the minimum flow for the year. These rates of draft, with the required reservoir capacities obtained from the mass curve, are shown in the Diagram of Required Capacity of Reservoir for varying rates of draft. This diagram shows that to secure a uniform flow equal to the mean annual flow (or 65 cubic feet per second), it will be necessary to provide a reservoir capacity of 600 million cubic feet or about 14,000 acre feet. To secure 50 cubic feet per second, 245 million cubic feet of storage or about 5,700 acre feet will be required.

The scheme of development at Eugenia, most economically feasible, is one involving the building of a dam above Eugenia Falls, a diversion canal from the reservoir thus formed, and about 5,000 feet of pipe line for an effective head of 500 feet. The initial development of 2,000 h.p. can be obtained with a dam 23 feet high. When the load builds up sufficiently to warrant extension of the plant, the water to operate an additional unit of 1,000 h.p. can be secured by raising this dam 10 feet. For the final development or full capacity, additional storage can be secured by a dam at Feversham, about 8 miles above Eugenia.

A study of the curves of storage capacities for different contour elevations that have been plotted for dams at Eugenia Falls and at Feversham, and as shown herewith, when analyzed in connection with the reservoir-draft curves, gives the necessary height to which the dams must be carried for any required amount of flow. The results are shown in the following tables. The appended curves of storage capacities for different contour elevations for Eugenia are more or less approximate, and may be changed when further data are obtained from the surveys now in progress.

Table of Estimated Storage Capacities

—	Elevation Crest of Dam	Storage in Million Cubic Feet
Eugenia	533	32
"	543	232
Feversham	105	225
"	110	305

Table Showing Estimated Volume of Flow from Storage

—	Storage in Million Cubic Feet	Uniform Flow in Cubic Feet per Second
Eugenia	32	35
"	232	49
Eugenia	32	50
Feversham	225	
Eugenia	32	54
Feversham	305	
Eugenia	232	59
Feversham	225	
Eugenia	232	62
Feversham	305	

A reference to the mass-curve indicates that the fall replenishment of storage is very limited for this watershed. This conclusion is borne out by the discharges taken during 1913. Thus the storage reservoirs must impound sufficient water during the months of March, April and May to carry over the rest of the year, since it is impossible to depend on a fall filling.

The problem of determining the proper turbine capacity to install at any power-site is a difficult matter, depending to a great extent on the judgment of the designer. One method of obtaining the economical capacity of a river, to generate power, is by means of a "duration curve." The duration curve is plotted by arranging the several daily discharges in order of their size; *i.e.*, the maximum quantity for any one day in the year is placed as an ordinate over, say, the first day in the year, and so on down to the smallest daily quantity for that year, placed as an ordinate for the three hundred and sixty-fifth or last day of the year. This gives a smooth regular line, as may be seen in the appended duration curve plotted for June, 1910, to June, 1911. From this curve the duration during the year of any given river flow may be directly read off.

Experience on rivers used for water power has shown that, in general, the quantity found to obtain at ordinate 182½ on the curve represents the proper and most efficient turbine capacity that may be installed. A variation of 30 days either side of this ordinate is in cases admissible.

The duration curve for 1910 and 1911 represents the flow of a minimum year, as was noted in the 1911 Report of the Hydro-Electric Commission. On the ordinate 182½ the flow is 43' cubic feet per second, at 152½ the flow is 48 cubic feet per second. It is reasonable to expect that the average flow ordinate at 182½ will be at least 50 cubic feet per second, and at 152½ will be 55 cubic feet per second for an ordinary year.

The development will therefore be planned to use the most economic turbine capacity represented by this flow. The ultimate capacity will, of course, be controlled by the later discharge records which will be obtained during the operation of the plant, and which will give more data for fixing the average flow to be expected. The operating records of the plant will also give the load factor to be expected on the complete ultimate development.

An inspection of the monthly flow tables for the Beaver River during 1910-11-13, shows a very remarkable coincidence of values for the months of low flow. This is due primarily to the fact that the Beaver River is a spring-fed stream in the fullest sense of the term, ground storage capacity existing to an unusual degree. This condition is in turn influenced by the existence of large tracts of undrained and uncleared swamp throughout the watershed.

Daily Gauge Height and Discharge of Beaver River, at Eugenia, for 1913

Drainage area, 74 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.605	77	2.435	51	2,305	36	2.255	30	2.25	30	2.26	31	2.395	46
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.595	71	2.420	49	2.295	35	2.255	30	2.21	27	2.255	30	2.93	50
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.585	70	2.415	48	2.290	34	2.255	30	2.22	27	2.25	30	2.44	52
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.575	69	2.430	50	2.295	35	2.245	29	2.225	27	2.29	34	2.39	45
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.565	67	2.480	57	2.295	35	2.240	29	2.22	27	2.285	34	2.385	45
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.625	75	2.475	55	2.265	32	2.240	29	2.215	27	2.27	38	2.365	43
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.790	99	2.420	49	2.275	33	2.235	28	2.23	28	2.255	30	2.35	41
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.765	95	2.400	46	2.245	30	2.250	30	2.22	28	2.26	31	2.39	45
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.685	83	2.395	46	2.285	34	2.245	29	2.21	27	2.28	33	2.335	39
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.630	76	2.395	46	2.295	35	2.235	28	2.21	27	2.30	35	2.34	40
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.605	72	2.380	44	2.300	35	2.225	28	2.22	27	2.295	35	2.33	39
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.580	69	2.405	47	2.285	34	2.225	28	2.23	28	2.29	34	2.34	40
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.570	68	2.415	48	2.275	33	2.220	27	2.21	27	2.295	35	2.39	40
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.545	64	2.400	46	2.270	32	2.220	27	2.22	27	2.315	36	2.85	41
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.540	64	2.375	44	2.270	32	2.215	27	2.21	27	2.315	36	2.355	41
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.535	62	2.365	43	2.260	31	2.225	28	2.215	27	2.305	36	2.355	41
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.525	62	2.360	42	2.265	31	2.230	28	2.21	27	2.285	34	2.34	40
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.515	61	2.360	42	2.260	31	2.260	31	2.23	28	2.305	36	2.34	40
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.535	63	2.355	41	2.245	29	2.245	29	2.26	31	2.465	55	2.34	40
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.535	63	2.350	41	2.240	29	2.225	28	2.22	27	2.74	88	2.345	40
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.545	64	2.340	40	2.230	29	2.26	31	2.225	27	2.68	83	2.32	38
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.520	61	2.335	39	2.265	31	2.24	29	2.265	31	2.61	73	2.31	36
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.495	58	2.330	39	3.300	35	2.245	29	2.255	30	2.57	68	2.325	38
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.470	55	2.330	39	2.295	35	2.23	28	2.38	44	2.525	62	2.31	36
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.465	55	2.325	38	2.265	31	2.225	27	2.38	44	2.495	58	2.315	36
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.490	58	2.320	38	2.265	31	2.225	27	2.32	38	2.46	55	2.22	27
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.490	58	2.310	36	2.265	31	2.24	29	2.28	33	2.425	50	2.23	28
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.470	55	2.315	36	2.255	30	2.23	28	2.295	35	2.395	46	2.29	34
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.445	52	2.310	37	2.275	33	2.205	25	2.295	35	2.375	44	2.28	33
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.430	50	2.315	36	2.295	35	2.235	28	2.29	34	2.395	46	2.32	36
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.295	35	2.280	33	.....	.....	2.23	28	.....	.....	2.28	33

Monthly discharge of Beaver River at Eugenia for year 1910

Drainage area, 74 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	58	36	41.4	.78	.49	.57	.65
August	50	29	34.9	.68	.39	.47	.54
September	39	26	28.5	.53	.35	.39	.43
October	48	23	31.6	.65	.31	.43	.44
November	60	35	44.1	.81	.47	.60	.69
December	42	27	35.1	.57	.37	.47	.54
The period	60	23	35.92	.81	.31	.49	3.29

Monthly discharge of Beaver River at Eugenia for year 1911

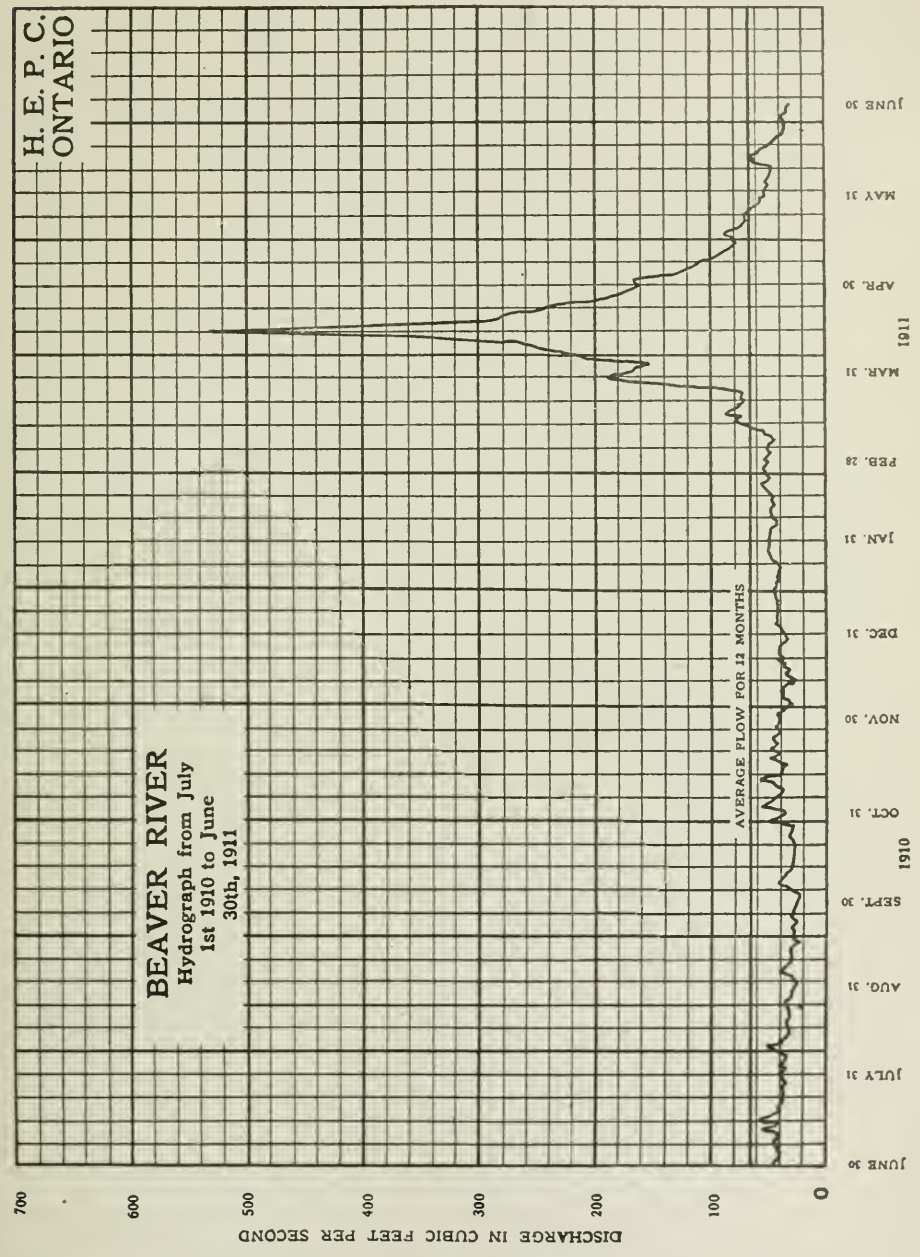
Drainage area, 74 square miles

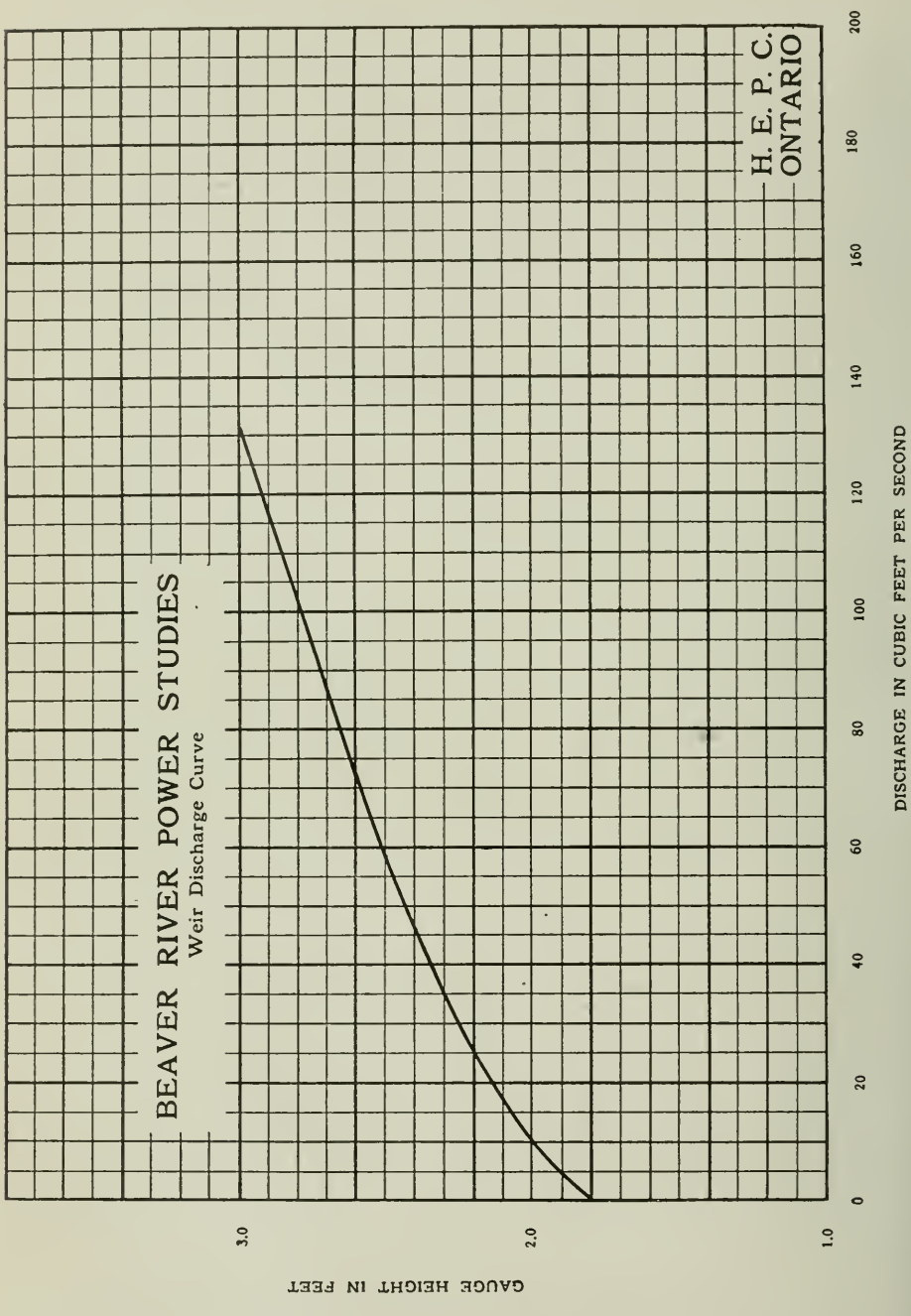
Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	51	36	43.5	.69	.49	.59	.68
February	55	43	49.1	.74	.58	.66	.69
March	192	44	83.6	2.59	.59	1.13	1.30
April	534	151	252.0	7.23	2.04	3.41	3.80
May	166	53	92.2	2.24	.72	1.25	1.44
June	69	32	46.8	.93	.43	.63	.71
July	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	534	32	94.53	7.23	.43	1.28	8.62

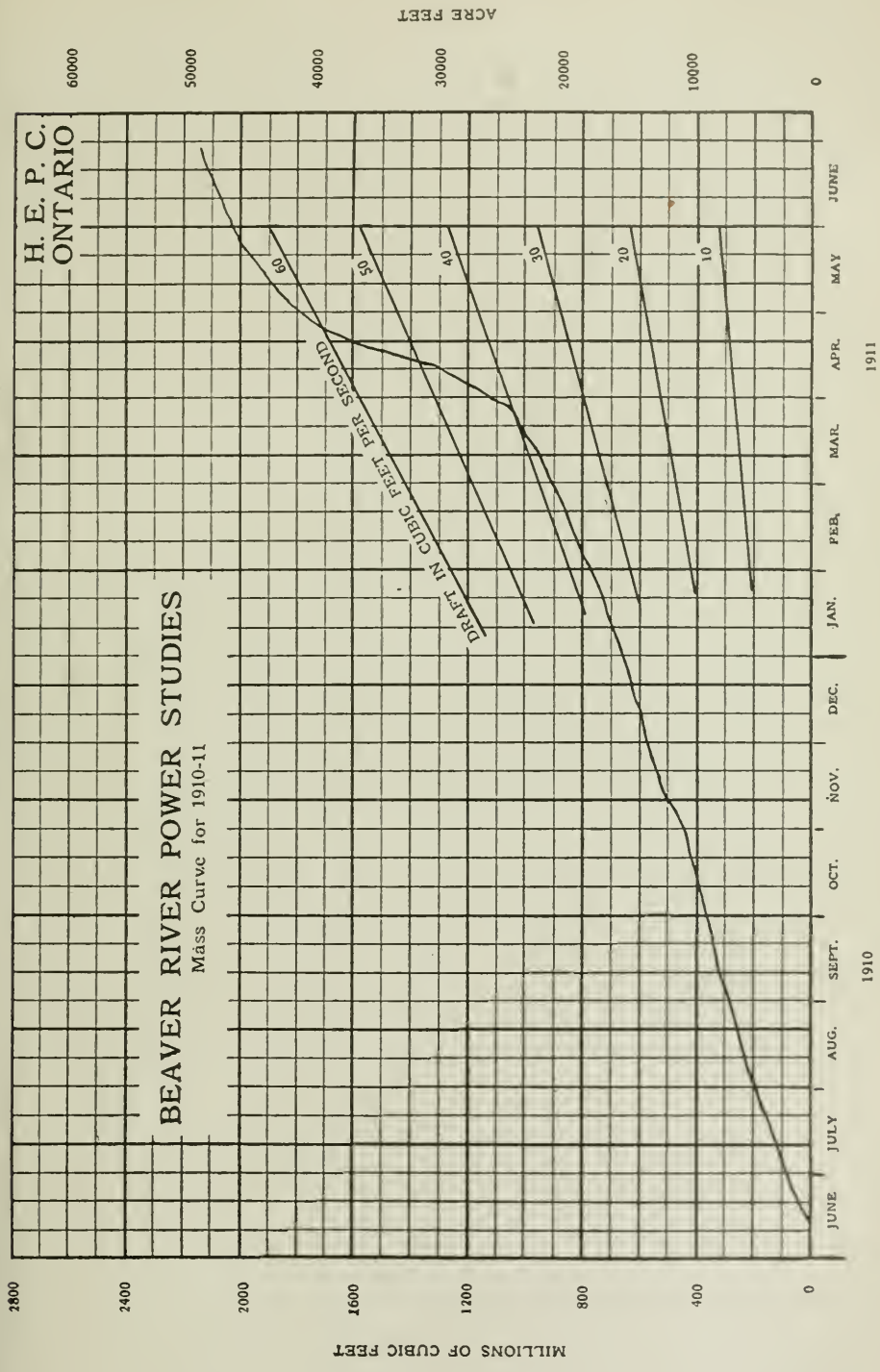
Monthly discharge of Beaver River at Eugenia for year 1913

Drainage area, 74 square miles

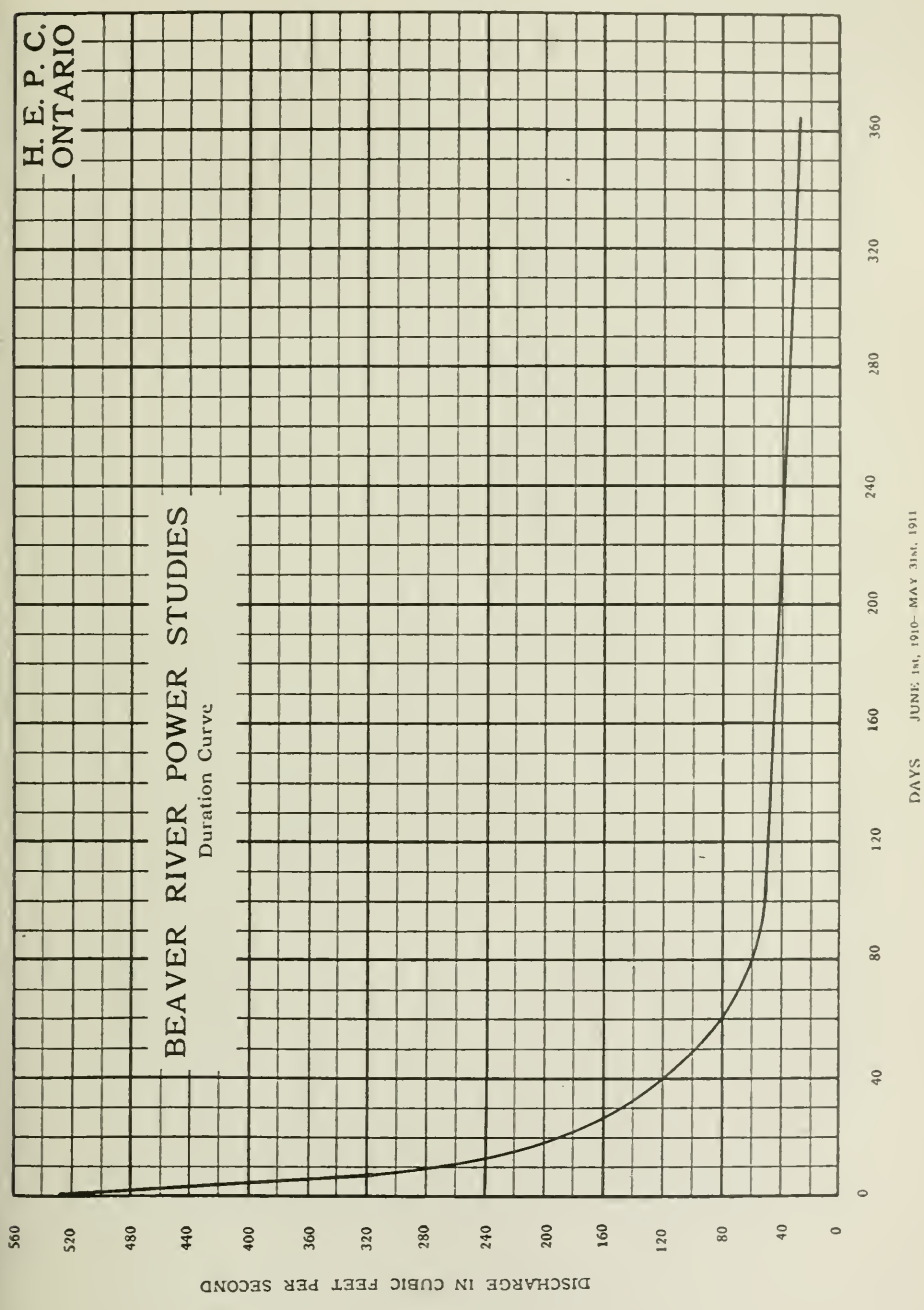
Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January							
February							
March							
April							
May							
June	99	50	66.4	1.34	.67	.90	1.00
July	57	35	43.5	.77	.47	.59	.68
August	36	29	32.6	.49	.39	.44	.51
September	31	25	28.5	.42	.34	.39	.43
October	44	27	30.0	.59	.36	.41	.47
November							
December							
The period	99	25	40.20	1.34	.34	.55	3.09

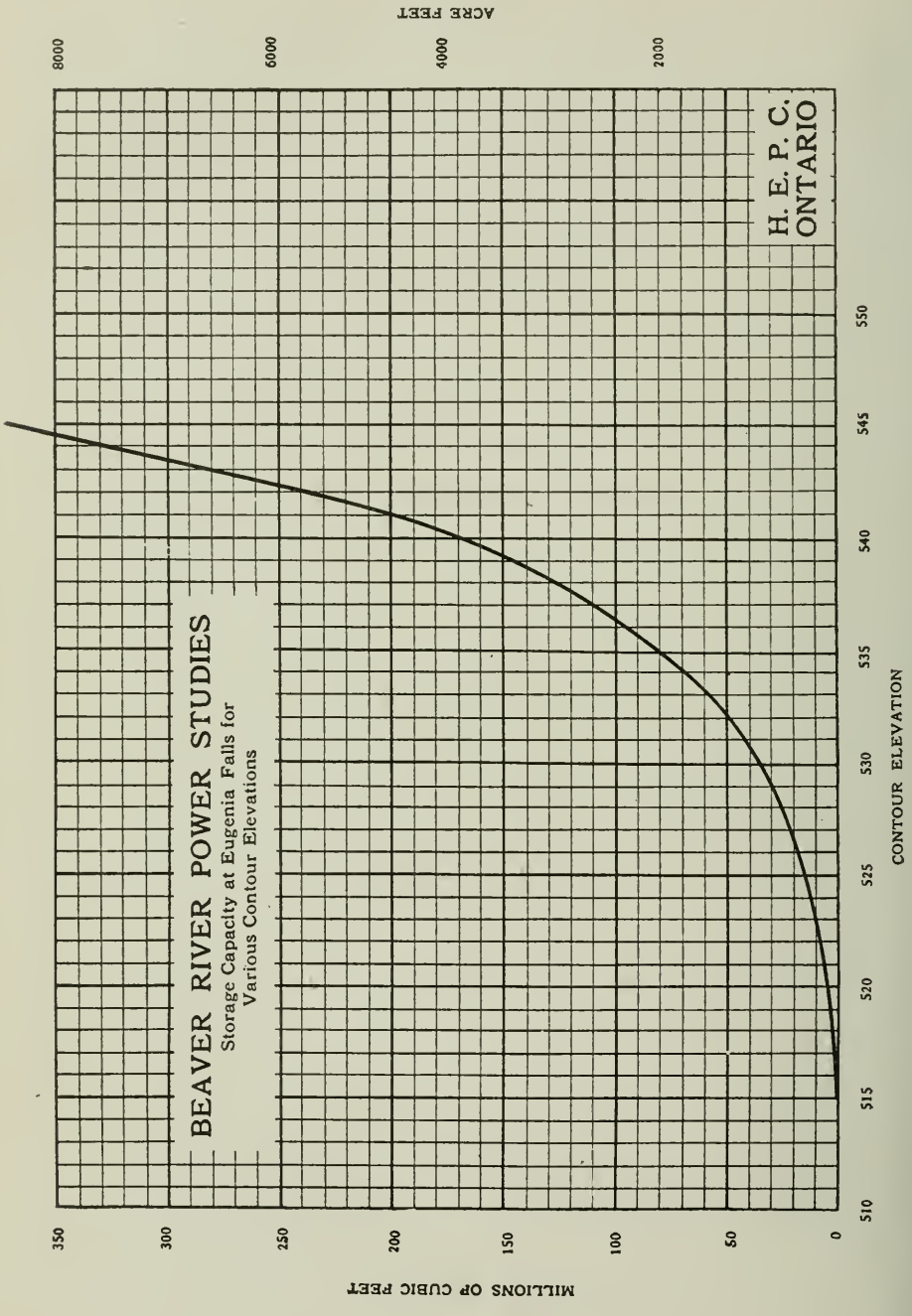

H. E. P. C.
ONTARIO
BEAVER RIVER
Hydrograph from July
1st 1910 to June
30th, 1911
AVERAGE FLOW FOR 12 MONTHS
DISCHARGE IN CUBIC FEET PER SECOND
700
600
500
400
300
200
100
0
JUNE 30
JULY 31
AUG. 31
SEPT. 30
OCT. 31
NOV. 30
DEC. 31
JAN. 31
FEB. 28
MAR. 31
APR. 30
MAY 31
JUNE 30
1910
1911

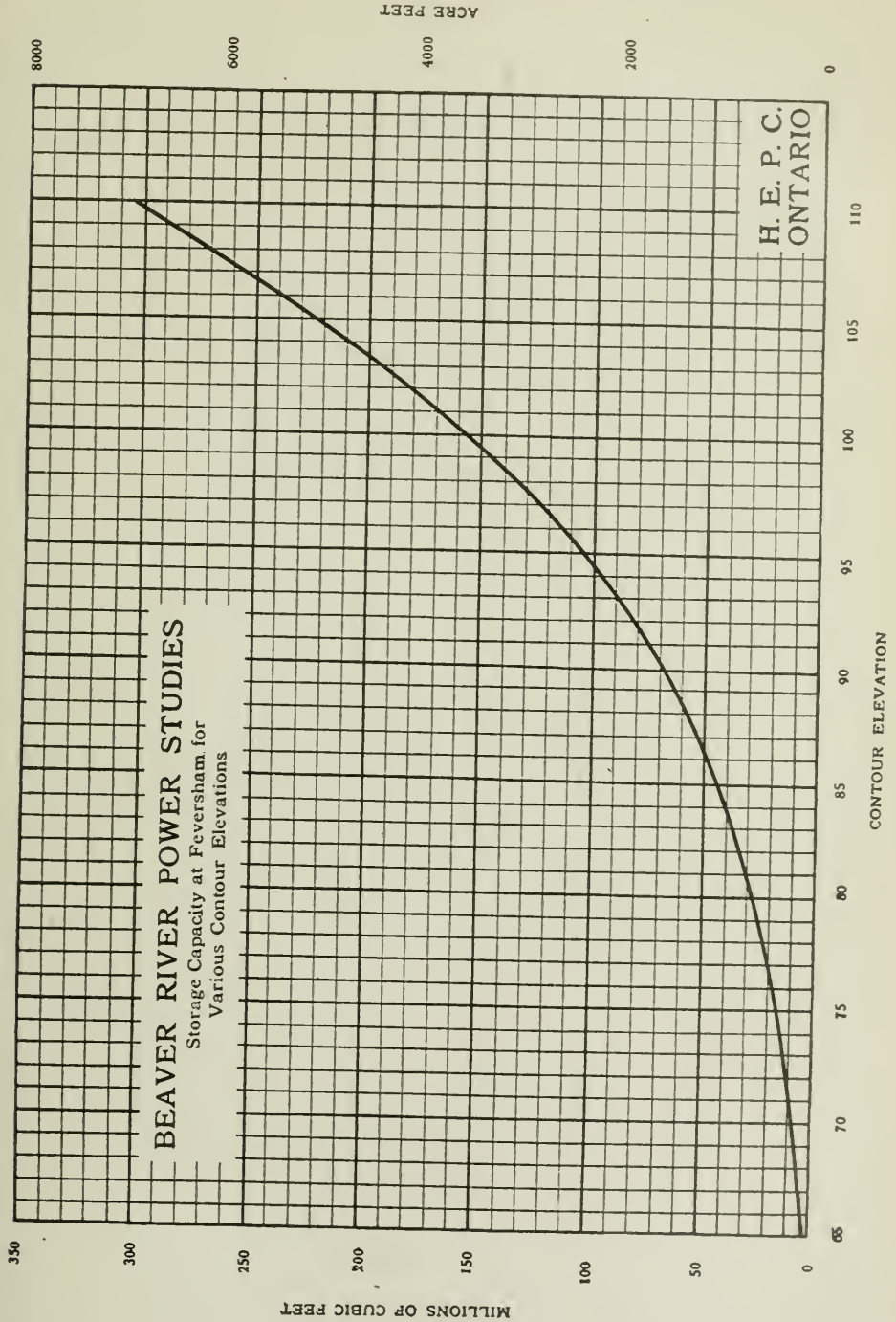

BEAVER RIVER POWER STUDIES
Weir Discharge Curve
H. E. P. C.
ONTARIO
GAUGE HEIGHT IN FEET
3.0
2.0
1.0
0
20
40
60
80
100
120
140
160
180
200
DISCHARGE IN CUBIC FEET PER SECOND

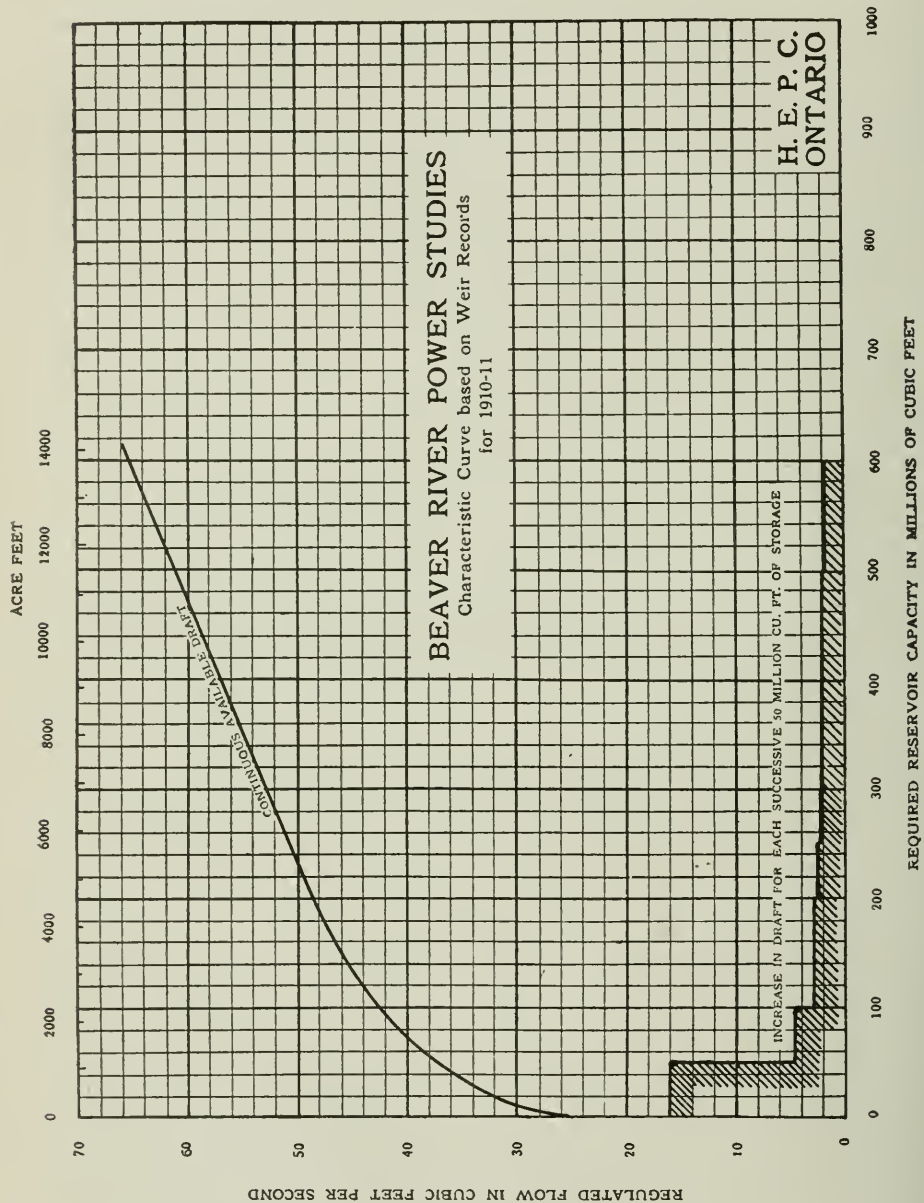

H. E. P. C.
ONTARIO
BEAVER RIVER POWER STUDIES
Mass Curve for 1910-11
DRAFT IN CUBIC FEET PER SECOND
60
50
40
30
20
10
MILLIONS OF CUBIC FEET
2800
2400
2000
1600
1200
800
400
0
ACRE FEET
60000
50000
40000
30000
20000
10000
0
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1910
1911

BEAVER RIVER POWER STUDIES
Diagram of Required Reservoir Capacity for Various Rates of Draft Based on Weir Records of 1910-11
H. E. P. C. ONTARIO
REQUIRED RESERVOIR CAPACITY IN MILLIONS OF CUBIC FEET
0
100
200
300
400
500
600
700
ACRE FEET
0
4000
8000
12000
16000
RATE OF DRAFT IN CUBIC FEET PER SECOND
20
30
40
50
60
70


H. E. P. C.
ONTARIO
BEAVER RIVER POWER STUDIES
Duration Curve
DISCHARGE IN CUBIC FEET PER SECOND
0
40
80
120
160
200
240
280
320
360
400
440
480
520
560
0
40
80
120
160
200
240
280
320
360
DAYS JUNE 1st, 1910– MAY 31st, 1911


BEAVER RIVER POWER STUDIES
Storage Capacity at Eugenia Falls for
Various Contour Elevations
H. E. P. C.
ONTARIO
MILLIONS OF CUBIC FEET
ACRE FEET
CONTOUR ELEVATION
0
50
100
150
200
250
300
350
2000
4000
6000
8000
510
515
520
525
530
535
540
545
550


BEAVER RIVER POWER STUDIES
Storage Capacity at Feversham for Various Contour Elevations
H. E. P. C. ONTARIO
MILLIONS OF CUBIC FEET
ACRE FEET
CONTOUR ELEVATION
350
300
250
200
150
100
50
0
8000
6000
4000
2000
0
65
70
75
80
85
90
95
100
105
110


BEAVER RIVER POWER STUDIES
Characteristic Curve based on Weir Records for 1910-11
H. E. P. C. ONTARIO
CONTINUOUS AVAILABLE DRAFT
INCREASE IN DRAFT FOR EACH SUCCESSIVE 50 MILLION CU. FT. OF STORAGE
ACRE FEET
0 2000 4000 6000 8000 10000 12000 14000
REGULATED FLOW IN CUBIC FEET PER SECOND
70 60 50 40 30 20 10 0
REQUIRED RESERVOIR CAPACITY IN MILLIONS OF CUBIC FEET
0 100 200 300 400 500 600 700 800 900 1000

SAULT STE. MARIE

From time to time the Municipality of Sault Ste. Marie has applied for assistance in the matter of locating a suitable source of power for the requirements of the Municipality. Requests have been made at various times for reports as to the possibilities of obtaining the necessary power from the Mississaga, Chippawa and Montreal Rivers, but the quantities of power available from these different sources, and the very unfavorable conditions as regards transmission, have obviated the necessity of considering any of these propositions in detail, and the Municipality has been informed that the only source of power worth considering is the St. Mary's Rapids adjacent to the town.

Several years ago a report was made in connection with the possibility of developing power at White Fish Island, in the St. Mary's Rapids, but the conditions as regards riparian ownership and the division of water between Canada and the United States were not then sufficiently defined to permit the formulation of a definite scheme of development.

Under date of June 27th, 1913, the Michigan Lake Superior Power Co. applied to the International Joint Commission for the right to divert 25,000 sec. ft. of water from the St. Mary's River for power purposes. This brought the matter of division of flow at Sault Ste. Marie to an issue, and the conditions under which the Dominion of Canada will consent to the granting of the required permit to the Michigan Lake Superior Power Co. will involve the final settlement of the power question at Sault Ste. Marie.

The position of the Province in connection with this application is outlined in a statement forwarded to the International Joint Commission by Council on behalf of the Province of Ontario. The position taken by the Province as set forth in this response is as follows:—

1. The Province of Ontario, as the owner of the bed of the St. Mary's River and of the water power and waters thereof on the Canadian side of the International boundary, is interested in the matter of the application of the Michigan Lake Superior Power Co.

2. The Province of Ontario, by itself and its nominees, desires and intends to utilize one-half of the water of the St. Mary's River available, or which may become available for the development of power.

3. The Province of Ontario is content to consent to an Order of approval being made by the International Joint Commission in this matter in the form and on the conditions hereinafter stated:

(*a*) That the Order of approval shall define the term "Primary Water" as used in the application of the Michigan Lake Superior Power Co. as that portion of the outflow from Lake Superior which shall be considered as being continuously and permanently available for power purposes.

(*b*) That the Order of approval shall limit the amount of Primary Water to 60,000 cu. ft. per second, of which amount 30,000 cu. ft, per second shall be permanently available for use in Canada, and 30,000 cu. ft. per second permanently available for use in the United States.

(*c*) That before the application is disposed of an undertaking on behalf of the United States be filed with the International Joint Commission agreeing, in consideration of the Dominion of Canada and of the Province of Ontario consent-

ing to the approval hereinafter described being given by the International Joint Commission, that under no circumstances at any time hereafter will the United States itself use for power purposes, or allow the use for power purposes on the part of its Lessees or others, by diversion or any other means in either case, of an aggregate of more than 30,000 cu. ft. per second of Primary Water flowing out of Lake Superior by way of the natural channel of the St. Mary's River, or by way of any artificial race-ways, canals, or channels which may now or in the future exist in, along, or in the vicinity of, the St. Mary's Rapids.

The matter of this application will shortly come before the International Joint Commission for final disposal, and it is evident from the above that the conditions set forth as governing the consent of the Province of Ontario will allow definite action to be taken in the matter of formulating a scheme for the supply of power to the Municipality of Sault Ste. Marie.

MAITLAND RIVER

A report on the power possibilities of the Maitland River was given in the Fifth Annual Report. Since the preparation of that report, continuous daily gauge readings have been made at Benmiller, and these readings, with the aid of a rating curve of the stream, compiled from the regular monthly measurement of discharge, have furnished the data for a further study of the hydrology of the river in its relation to the development of power.

The appended duration curves plotted for the years 1911, 1912 and 1913, indicate that the amount of flow for economical development on this river ranges from 300 cu. ft. per second on the 212½ ordinate to 1,000 cu. ft. per second on the 152½ ordinate. (For an explanation of the Duration Curve and the Mass Curve, see report on the Beaver River.)

In last year's report the abnormal flow characteristics of the Maitland River were noted, and attention was drawn to the fact that any development of power must depend for continuous operation on the minimum flow of the stream in conjunction with such advantages as can be derived from local pondage.

During the summer of 1913, on a number of days the minimum flow of the stream was 75 cu. ft. per second. At the Black Hole site, with an operating head of 80 ft., this flow, without pondage, gives a minimum continuous power capacity of about 545 h.p. The local pondage above the Black Hole dam would be something over 700 acres. Assuming a maximum draw on this pond of 5 ft. (thus giving a minimum operating head of 75 ft.), a reservoir capacity of 3,500 acre feet would be avaiable.

An analysis of the mass curve of the Maitland River from 1911 to date, shows that 3,500 acre feet of reservoir capacity will provide a continuous discharge of about 110 cu. ft. per second. In extremely dry years it is probable this flow would not exceed 100 cu. ft. per second.

From the above fact, it is safe to say that any power development on the Maitland River at the Black Hole site could not be depended upon to deliver continuously more than 750 h.p.

The following table gives the amount of storage required for different rates of uniform draft up to 200 cu. ft. per second, with the continuous available power for these amounts, if developed at the Black Hole:

Required Storage in Million cu. ft.	Storage in Acre feet	Uniform Flow in cu. ft. per sec.	Continuous Power Available
0	0	75	545 h.p.
80	1,835	100	725 "
260	5,960	125	910 "
520	11,920	150	1,090 "
800	18,350	175	1,270 "
1,100	25,230	200	1,450 "

The above table shows that for the development of 1,500 h.p. of continuous power at the Black Hole about 25,000 acre-feet of storage will be required. Owing to the fact that facilities for storage in the Maitland River watershed are lacking to an unusual degree, the purchase of land construction of the necessary works would entail an expenditure which, added to abnormal cost of development at the Black Hole, places the project, for the time being, outside of economic limits as a source of continuous power.

Daily Gauge Height and Discharge of Maitland River, at Benmiller, for 1911

Drainage area, 950 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.63	355	13.30	140	13.34	155	13.22	115	13.72	450	13.93	700	15.26	3525
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.59	325	13.26	125	13.32	150	13.22	115	13.80	525	13.97	800	15.05	2950
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.72	450	13.32	115	13.30	140	13.22	115	13.80	525	14.01	850	14.76	2225
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.63	355	13.20	110	13.55	285	13.22	115	13.80	525	13.97	800	14.38	1380
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.72	450	13.18	105	13.55	285	13.22	115	13.76	500	14.01	850	14.30	1235
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.63	355	13.30	140	13.38	175	13.30	140	13.76	500	14.01	850	14.38	1380
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.59	325	13.43	205	13.38	175	13.30	140	13.72	450	14.30	1230	14.30	1235
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.61	335	13.36	165	13.43	205	13.34	155	13.68	400	14.55	1750	14.38	1380
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.63	355	13.38	175	13.38	175	13.34	155	13.63	355	15.05	2950	14.88	2550
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.61	335	13.38	175	13.38	175	13.34	155	13.63	355	14.88	2550	15.22	3400
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.61	335	13.30	140	13.38	175	13.34	155	13.68	400	14.88	2550	15.72	4950
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.63	355	13.26	125	13.38	175	13.43	205	13.72	450	15.05	2950	15.68	4900
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.76	500	13.24	120	13.38	175	13.47	225	13.63	355	15.05	2950	15.59	4550
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.80	525	13.22	115	13.34	155	13.47	225	13.59	325	14.97	2800	15.22	3400
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.84	570	13.20	110	13.30	140	13.47	225	13.55	285	14.88	2550	14.97	2800
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.76	500	13.22	115	13.34	155	13.43	205	13.55	285	14.76	2225	14.76	2225
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.76	450	13.47	225	13.43	205	13.43	205	13.55	285	14.72	2150	14.63	1950
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.63	355	13.53	270	13.38	175	13.38	175	13.23	355	15.22	3400	14.51	1650
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.50	245	13.40	185	13.34	155	13.38	175	13.76	500	15.26	3525	14.47	1600
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.47	225	13.59	325	13.30	140	13.34	155	13.18	615	15.30	3550	14.38	1380
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.43	205	13.43	205	13.26	125	13.34	155	13.80	525	15.26	3525	14.13	1000
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.38	175	13.36	165	13.25	125	13.34	155	13.93	685	15.22	3400	14.30	1300
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.38	175	13.30	140	13.24	120	13.38	175	14.22	1100	15.13	3200	14.47	1600
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.38	175	13.38	175	13.24	120	13.38	175	14.47	1600	15.01	2900	14.55	1750
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.38	175	13.38	175	13.26	125	13.38	175	14.43	1500	14.93	2675	14.47	1600
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.38	175	13.43	205	13.30	140	13.38	175	14.34	1350	14.76	2225	14.43	1500
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.36	165	13.43	205	13.30	140	13.47	225	14.22	1150	14.68	2050	14.38	1380
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.36	165	13.38	175	13.30	140	13.55	285	14.04	925	15.05	2950	14.26	1225
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.34	155	13.30	140	13.22	115	13.55	285	14.01	850	15.55	4425	14.18	1100
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.32	150	13.38	175	13.18	105	13.63	355	13.97	800	15.51	4300	14.18	1100
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.38	175	13.22	115	.....	.....	13.93	700	.....	.....	14.97	2800

Daily Gauge Height and Discharge of Maitland River, at Benmiller, for 1912

Drainage area, 950 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	14.68	2050	.....	.....	.....	4900	16.47	8875	13.88	620	14.93	2820	13.43	205	13.43	205	15.13	3400	14.47	1570	14.47	1570	14.39	1425
2	14.73	2250	.....	.....	.....	4900	16.72	9950	13.72	440	14.63	1990	13.39	180	13.39	180	15.97	6750	14.51	1665	15.05	3175	14.72	2250
3	14.72	2150	.....	.....	15.47	4600	16.55	9200	13.76	480	14.63	1990	13.39	180	13.47	225	15.80	6000	14.47	1570	15.30	3950	15.22	3700
4	14.84	2550	.....	.....	15.47	4600	16.55	9200	13.84	570	15.22	3700	13.39	180	13.43	205	15.38	4300	14.34	1310	15.39	4350	16.05	7000
5	14.13	1020	.....	.....	15.38	4300	16.63	9600	13.80	525	15.13	3400	13.34	165	13.39	180	14.97	2950	14.13	1020	15.22	3700	15.63	5275
6	14.47	1570	.....	.....	15.30	3950	20.26	41600	13.84	570	14.80	2450	13.34	165	13.39	180	14.63	1990	14.09	905	15.26	3900	15.68	5500
7	15.80	5000	.....	.....	15.22	3700	21.60	65000	13.70	525	14.55	1800	13.34	165	13.34	165	14.38	1380	14.05	850	16.40	8600	15.47	4600
8	16.22	7800	.....	.....	15.13	3400	20.22	41100	13.84	570	14.47	1570	13.30	140	13.39	180	14.22	1100	13.97	740	16.30	8150	15.22	3700
9	16.22	7800	.....	.....	15.09	3300	17.88	15000	13.84	570	14.30	1230	13.39	180	13.43	205	14.09	905	13.88	620	16.13	7450	14.76	2490
10	16.13	7450	.....	.....	15.09	3300	17.05	11400	13.80	525	14.13	965	13.39	180	13.43	205	13.97	740	14.01	785	14.88	2680	13.72	440
11	16.09	7275	.....	.....	15.05	3175	16.55	9200	13.76	480	13.97	740	13.39	180	13.47	335	13.88	620	14.13	1020	15.55	4950	13.97	740
12	16.01	6900	.....	.....	15.05	3175	16.05	7000	13.80	525	13.97	740	13.34	165	13.55	285	13.80	525	14.30	1230	15.30	3950	14.09	905
13	15.97	6750	.....	.....	15.05	3175	15.80	6000	13.88	620	13.88	620	13.34	165	13.72	440	13.72	440	14.34	1310	15.47	4600	14.13	965
14	15.97	6750	.....	.....	14.97	2950	15.53	4950	14.13	965	13.84	570	13.34	165	13.63	355	13.72	440	14.30	1230	16.80	10300	14.43	1485
15	15.88	6375	.....	.....	14.97	2950	15.72	5650	14.63	1990	13.80	525	13.34	165	13.55	285	13.80	525	14.26	1165	16.22	7800	14.59	1885
16	15.84	6175	.....	.....	14.97	2950	15.63	5275	14.55	1800	13.80	525	13.39	180	13.47	325	14.01	785	14.09	905	15.76	5825	14.72	2250
17	15.80	6000	.....	.....	14.97	2950	15.46	4600	14.55	1800	13.76	480	13.39	180	13.43	205	14.13	965	14.01	785	15.39	4350	14.63	1990
18	15.80	6000	.....	.....	14.80	2450	15.30	3950	14.63	1990	13.72	440	13.34	165	13.51	255	14.22	1100	13.97	740	15.13	3400	14.51	1660
19	15.76	5825	.....	.....	14.88	2680	15.18	3575	14.89	2690	13.68	400	13.30	140	13.47	225	14.30	1230	14.13	1020	14.97	2950	14.43	1485
20	15.84	6175	.....	.....	14.97	2950	15.01	3050	15.30	3950	13.68	400	13.30	140	13.47	225	14.42	1465	14.51	1660	14.82	2500	14.30	1230
21	15.88	6375	.....	.....	14.80	2450	14.76	2490	16.13	7450	13.59	325	13.47	225	13.80	525	14.47	1570	14.42	1465	14.72	2250	14.26	1165
22	15.88	6375	.....	.....	15.38	4300	14.68	2100	17.38	12800	13.55	285	13.63	355	13.88	620	14.42	1465	14.30	1230	14.68	2100	14.17	1025
23	15.84	6175	.....	.....	15.38	4300	14.55	1800	17.30	12400	13.51	255	13.63	355	14.01	785	14.47	1570	14.30	1230	15.49	4690	14.13	965
24	15.84	6175	.....	.....	15.47	4600	14.47	1570	16.97	11000	13.47	225	13.76	480	14.01	785	14.38	1380	14.26	1165	14.47	1570	14.05	850
25	15.84	6175	.....	.....	15.47	4600	14.42	1465	16.63	9600	13.43	205	13.76	480	14.09	905	14.34	1310	14.18	1040	14.47	1570	14.09	905
26	15.84	6175	.....	.....	15.51	4775	14.38	1380	16.05	7000	13.47	225	13.72	440	14.13	965	14.34	1210	14.09	905	14.43	1485	14.09	905
27	.....	6000	.....	.....	15.59	5100	14.22	1100	15.80	6000	13.47	225	13.63	355	13.97	740	14.38	1380	14.09	905	14.41	1445	13.97	740
28	.....	6000	.....	.....	15.59	5100	14.18	1040	15.63	5275	13.47	225	13.51	255	13.88	620	14.38	1380	14.05	850	14.39	1425	13.97	740
29	.....	5700	.....	.....	15.63	5275	14.05	785	15.30	3950	13.46	220	13.43	205	13.84	570	14.42	1465	13.99	765	14.34	1310	13.97	740
30	.....	5500	.....	.....	15.88	6375	13.97	740	16.13	7450	13.43	205	13.34	165	13.80	525	14.47	1570	13.97	740	14.30	1230	13.93	680
31	.....	5100	.....	.....	16.30	8150	.....	.....	15.38	4300	.....	.....	13.43	205	13.72	440	.....	.....	13.93	680	.....	.....	13.89	635

Daily Gauge Height and Discharge of Maitland River, at Benmiller, for 1913

Drainage area, 950 square miles

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	13.93	680	14.80	2450	14.55	1880	16.55	9200	14.05	785	13.45	215	13.30	140	13.05	80	13.09	90	13.05	80	.....	.....	.....	.....
2	14.05	785	14.63	1990	14.47	1570	15.23	5275	13.97	740	13.45	215	13.28	130	13.05	80	63.09	30	13.05	80	.....	.....	.....	.....
3	14.05	785	14.53	1800	14.30	1230	15.32	6500	13.89	630	13.45	215	13.24	120	13.11	90	13.05	80	13.09	90	.....	.....	.....	.....
4	14.01	800	14.47	1570	14.22	1100	17.72	14200	13.76	480	13.43	205	13.30	140	13.05	80	13.05	80	13.09	90	.....	.....	.....	.....
5	13.92	670	14.39	1425	14.13	965	17.34	12600	13.72	440	13.43	205	13.30	140	13.03	75	13.05	80	13.11	90	.....	.....	.....	.....
6	14.18	1040	14.34	1310	13.97	740	16.30	8150	13.72	440	13.37	175	13.30	140	13.03	75	13.05	80	13.11	90	.....	.....	.....	.....
7	14.22	1100	14.30	1230	13.84	570	15.59	5100	13.68	400	13.37	175	13.26	125	13.03	75	13.05	80	13.09	90	.....	.....	.....	.....
8	14.30	1230	14.30	1230	13.72	440	15.22	3700	13.64	360	13.37	175	13.22	115	13.03	75	13.05	80	13.01	70	.....	.....	.....	.....
9	14.43	1485	14.30	1230	13.97	740	15.05	3175	13.64	360	13.37	175	13.22	115	13.24	120	13.05	80	12.97	90	.....	.....	.....	.....
10	14.47	1570	14.30	1230	14.30	1230	15.30	3950	13.60	330	13.34	165	13.22	115	13.42	195	13.05	80	12.97	70	.....	.....	.....	.....
11	14.55	1880	14.30	1230	14.55	1880	16.55	9280	13.55	285	13.34	165	13.13	95	13.42	195	13.05	80	13.26	125	.....	.....	.....	.....
12	14.77	2200	14.26	1165	14.84	570	16.38	8500	13.55	285	13.34	165	13.20	110	13.17	100	13.09	90	13.34	155	.....	.....	.....	.....
13	14.41	1445	14.22	1100	15.30	3950	16.13	7450	13.59	325	13.34	165	13.26	125	13.17	100	13.09	90	13.30	140	.....	.....	.....	.....
14	14.39	1425	14.14	980	17.18	11950	15.55	4950	13.58	325	13.34	165	13.24	120	13.15	100	13.09	90	13.17	100	.....	.....	.....	.....
15	14.39	1425	14.14	980	19.72	34200	14.93	2820	13.59	325	13.32	150	13.07	85	13.13	95	12.97	70	13.17	100	.....	.....	.....	.....
16	15.47	4600	14.14	980	17.80	14550	14.72	2250	13.59	325	13.26	125	13.07	85	13.13	95	13.05	80	13.13	95	.....	.....	.....	.....
17	17.05	11400	14.09	905	16.97	11000	14.55	1880	13.59	325	13.26	125	13.07	85	13.09	95	13.09	90	13.22	115	.....	.....	.....	.....
18	17.22	12100	14.05	850	16.30	8150	14.38	1380	13.59	325	13.22	115	13.07	85	13.13	95	13.09	90	13.30	140	.....	.....	.....	.....
19	16.89	10700	14.22	1100	15.80	6000	14.30	1230	13.64	360	13.34	115	13.18	105	13.05	80	13.09	90	13.34	155	.....	.....	.....	.....
20	16.72	9950	14.47	1570	16.22	7800	14.22	1100	13.64	360	13.37	175	13.17	100	13.13	95	13.17	100	13.34	155	.....	.....	.....	.....
21	16.72	9950	14.47	1570	16.47	8875	14.13	365	13.64	360	13.34	165	13.13	95	13.15	100	13.17	100	13.38	175	.....	.....	.....	.....
22	16.55	9200	14.66	2025	16.34	8325	14.09	905	13.64	360	13.30	140	13.13	95	13.13	95	13.13	95	13.42	195	.....	.....	.....	.....
23	16.34	8350	15.38	4300	16.55	9200	14.13	965	13.59	325	13.30	140	13.13	95	13.13	95	13.09	90	13.51	255	.....	.....	.....	.....
24	16.13	7450	15.01	3050	15.11	3200	14.09	905	13.59	325	13.32	150	13.13	95	13.15	100	13.07	85	13.80	525	.....	.....	.....	.....
25	15.76	5825	15.01	3050	18.05	16700	14.09	905	13.55	285	13.32	150	13.11	90	13.15	100	13.17	100	13.80	525	.....	.....	.....	.....
26	15.55	4950	14.89	2690	17.47	13500	14.13	965	13.55	285	13.30	140	13.11	90	13.13	95	13.13	95	13.74	460	.....	.....	.....	.....
27	15.30	3950	14.80	2450	16.30	8150	14.22	1100	13.55	285	13.32	150	13.11	90	13.13	95	13.13	95	13.66	380	.....	.....	.....	.....
28	15.09	3300	14.68	2100	16.05	7100	14.22	1100	13.57	300	13.32	150	13.11	90	13.13	95	13.11	90	13.59	320	.....	.....	.....	.....
29	14.84	2550	.....	.....	15.92	6500	14.18	1040	13.51	255	13.30	140	13.09	90	13.11	90	12.99	70	13.63	355	.....	.....	.....	.....
30	14.72	2250	.....	.....	15.80	6000	14.09	905	13.47	225	13 32	150	13.09	90	13.11	90	13.05	80	13.63	355	.....	.....	.....	.....
31	14.97	2950	.....	.....	16.05	7100	.....	.....	13.47	225	.....	.....	13.09	90	13.11	90	.....	.....	13.63	355	.....	.....	.....	.....

Monthly discharge of Maitland River at Benmiller for year 1911

Drainage area, 950 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per spuare mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	570	150	314	.60	.16	.33	.37
July	325	105	165	.34	.11	.17	.20
August	285	105	159	.30	.11	.17	.20
September	355	115	181	.37	.12	.19	.21
October	1,600	285	634	1.68	.30	.67	.76
November	4,425	700	2,455	4.67	.74	2.58	2.88
December	4.950	1,000	2,161	5.21	1.05	2.28	2.63
The period	4,950	105	867	5.21	.11	.91	7.25

Monthly discharge of Maitland River at Benmiller for year 1912

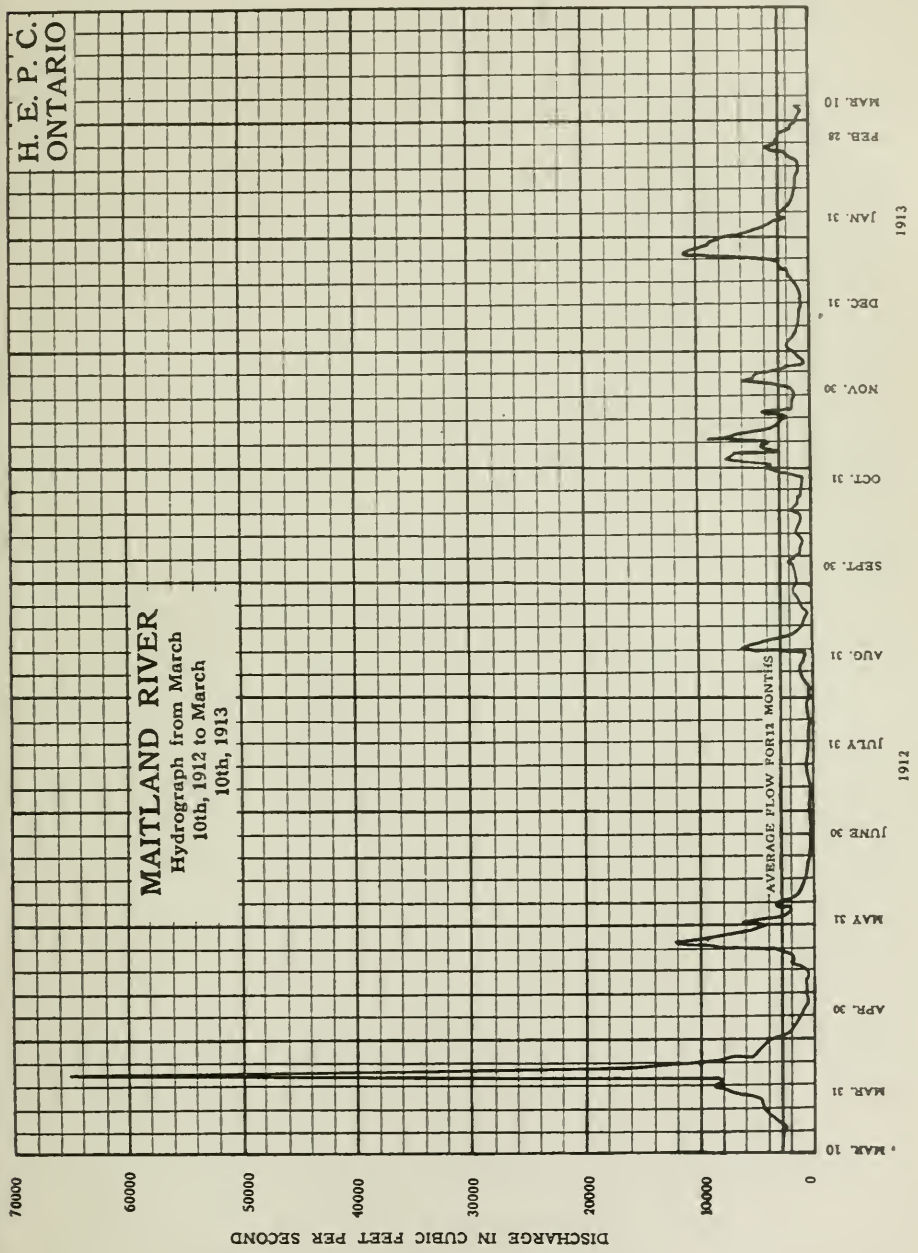
Drainage area, 950 square miles

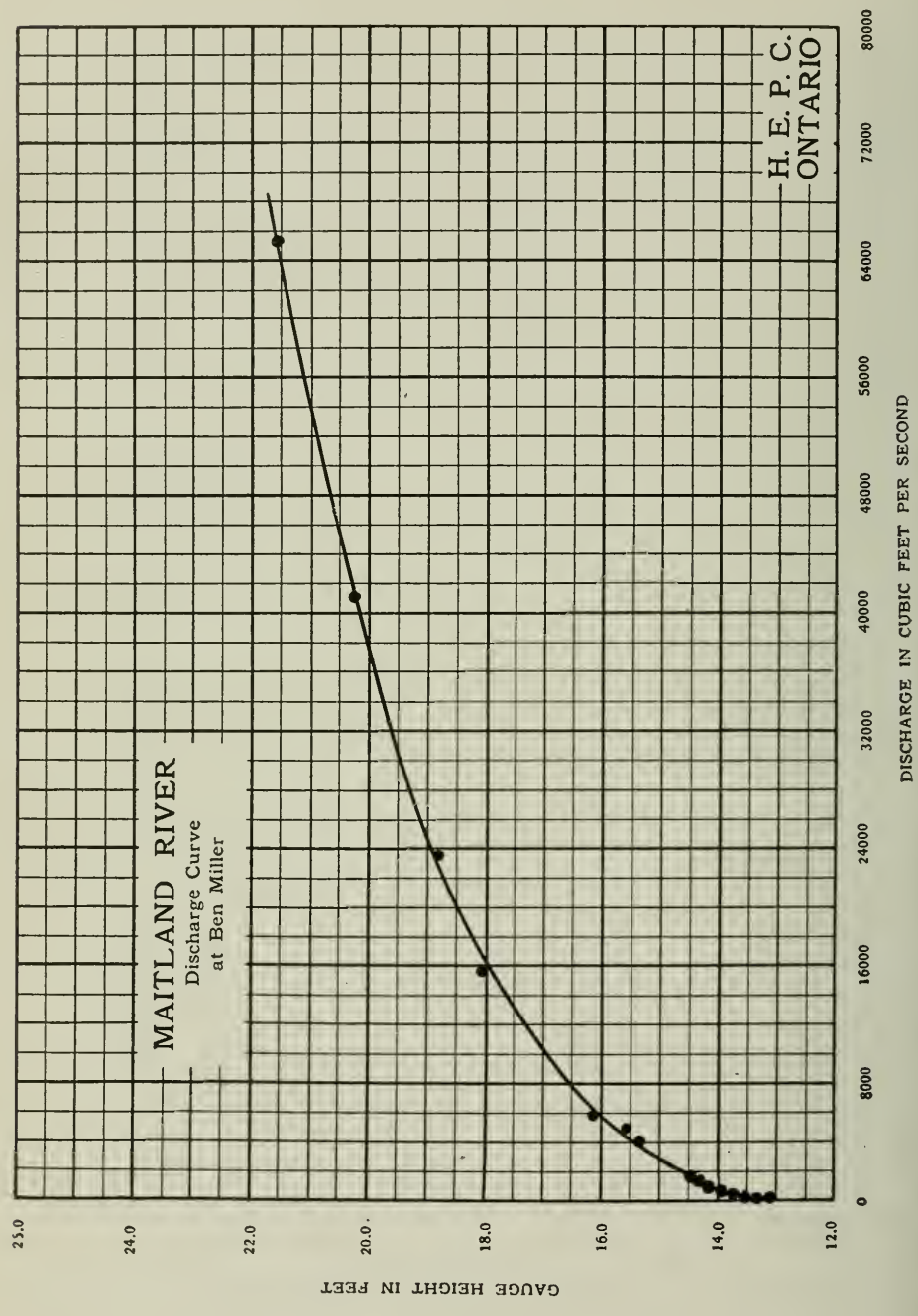
Month.	Discharge in second-feet.			Discharge in second-feet per square mile.			Run-off.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	7,800	1,020	5,500	8.22	1.07	5.80	6.68
February	.....	.....	.....	.....	.....	.....	.....
March	8,150	2,450	4,040	8.58	2.58	4.25	4.90
April	65,000	740	9,630	68.45	0.78	10.10	11.27
May	12,800	440	3,530	13.47	0.46	3.72	4.29
June	3,700	205	992	3.89	0.22	1.04	1.16
July	480	140	222	0.50	0.15	0.23	.27
August	965	165	392	1.01	0.17	0.41	.47
September	6,750	440	1,732	7.10	0.46	1.82	2.03
October	1,665	620	1,066	1.75	0.65	1.12	1.29
November	10.300	1.230	3.910	10.82	1.29	4.12	4.60
December	7.000	440	1,945	7.37	0.46	2.04	2.35
The period	65,000	140	2,996	68.45	0.15	3.15	39.31

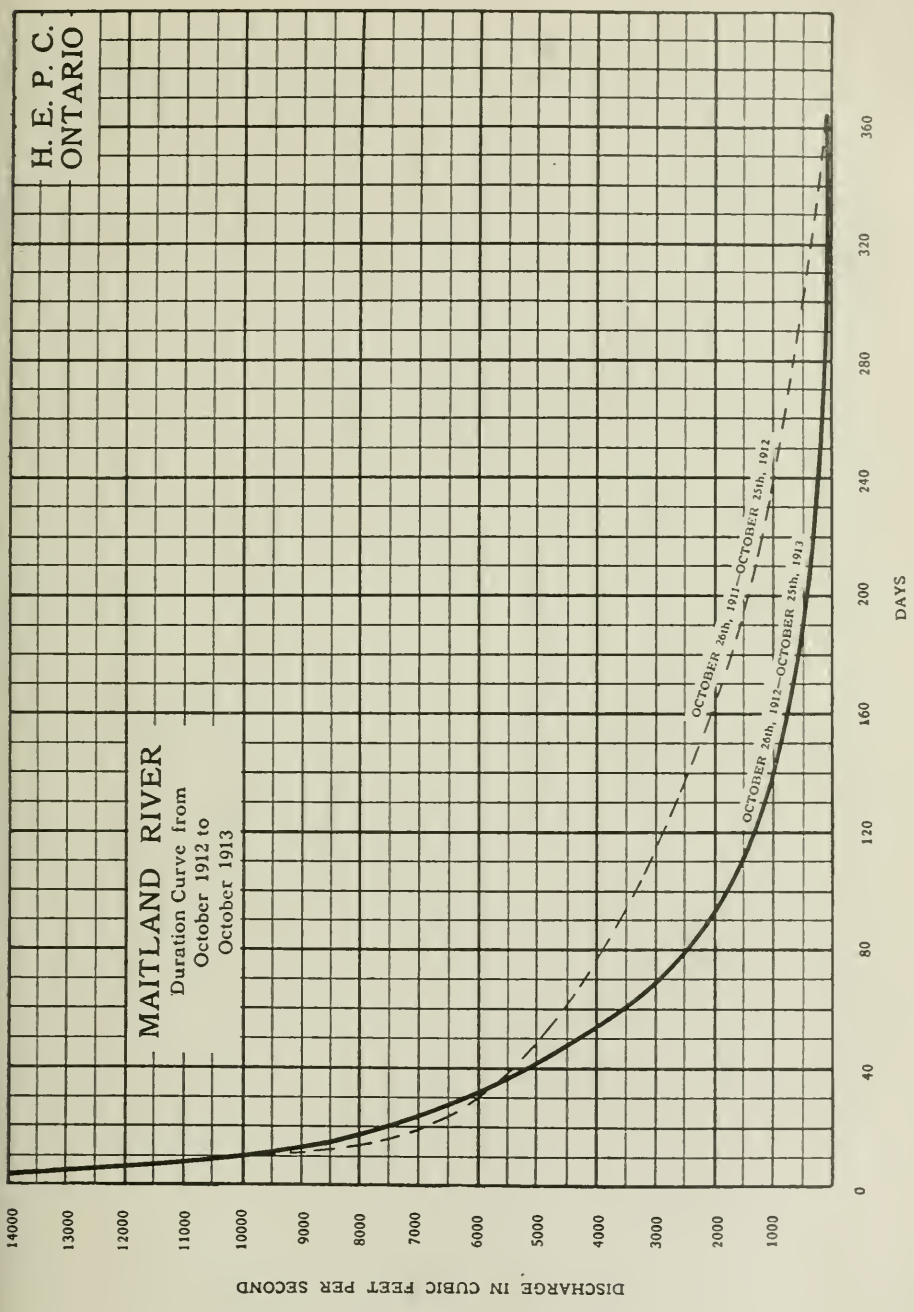
Monthly discharge of Maitland River at Benmiller for year 1913

Drainage area, 950 square miles

Month.	Discharge in second-feet.			Discharge in second-feet per square mile			Run-off
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Depth in inches on drainage area.
January	12,100	670	4,125	12.72	.70	4.34	5.00
February	4,300	850	1,700	4.52	.89	1.79	1.86
March	34,200	440	6,620	35.95	.46	6.97	8.05
April	14,200	905	4,075	14.94	.95	4.29	4.79
May	785	225	369	0.83	.24	0.39	0.45
June	215	115	162	0.23	.12	0.17	0.19
July	140	85	106	0.15	.09	0.11	0.13
August	195	75	98	0.21	.08	0.10	0.12
September	100	70	86	0.11	.07	0.09	0.10
October	525	70	193	0.55	.07	0.20	0.23
November	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
The period	34,200	70	1,753	35.95	.07	1.85	20.92


H. E. P. C.
ONTARIO
MAITLAND RIVER
Hydrograph from March
10th, 1912 to March
10th, 1913
AVERAGE FLOW FOR 12 MONTHS
DISCHARGE IN CUBIC FEET PER SECOND
70000
60000
50000
40000
30000
20000
10000
0
MAR. 10
MAR. 31
APR. 30
MAY 31
JUNE 30
JULY 31
AUG. 31
SEPT. 30
OCT. 31
NOV. 30
DEC. 31
JAN. 31
FEB. 28
MAR. 10
1912
1913


MAITLAND RIVER
Discharge Curve
at Ben Miller
H. E. P. C.
ONTARIO
GAUGE HEIGHT IN FEET
25.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
DISCHARGE IN CUBIC FEET PER SECOND
0
8000
16000
24000
32000
40000
48000
56000
64000
72000
80000


H. E. P. C.
ONTARIO
MAITLAND RIVER
Duration Curve from
October 1912 to
October 1913
OCTOBER 26th, 1911—OCTOBER 25th, 1912
OCTOBER 26th, 1912—OCTOBER 25th, 1913
DISCHARGE IN CUBIC FEET PER SECOND
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
40
80
120
160
200
240
280
320
360
DAYS

HYDROGRAPHIC SURVEYS

The stream measurement work developed in 1912 has been carried on continuously up to the present time with satisfactory results in the case of some rivers, and the reverse in others, as the appended tabular data will indicate. The relation between gauge height and discharge was disturbed in nearly every case by ice conditions, as was to be expected. In the case of the rivers in the south-western peninsula, such as the Grand, Maitland, Saugeen, Thames, Credit, and Nottawasaga, measurable velocities could in general only be obtained at wide shallow sections, where a high degree of accuracy in measurement could not be depended upon. The large number of mill-dams located in these streams also made it impossible to locate all gauges where they would not be affected by back-water at high stages of flow. As mentioned elsewhere, this trouble has not yet manifested itself at the stations established on the Grand River during 1913, but it is to be expected during periods of high water.

In the case of the northern rivers, the above conditions were aggravated in many instances by the necessity of locating stations at accessible points. This usually meant the use of a bridge station, and in the case of the Sturgeon, Maganetawan, Wahnapitae, Spanish and Seguin Rivers, backwater trouble occurs intermittently owing to the operation of dams in connection with power development. The Mississaga station is seriously affected by wind levels on Lake Huron.

In the case of the Thames, Saugeen, South, Sturgeon and Credit rivers it has been found that by eliminating measurements where backwater effects are plainly evident, a fairly good station rating curve is obtainable. These curves are appended hereto, along with others which may be accepted without explanation. An effort will be made to re-locate the gauges at some of these stations so as to produce better results, but in most cases the location of stations altogether beyond the influence of backwater would entail the use of camping outfits for purposes of measurement and others items involving an expense which may not prove justifiable.

In May, 1913, a number of enamelled steel staff gauges were ordered. They were manufactured in England and only delivered in the early part of September. These gauges have been set at all stations on the Grand River and at the better class of stations on the other rivers. Gauges will not be set at the low class stations until every reasonable means have been employed to improve or supersede them.

Gauge recorders taking daily readings of water level are at present employed on the Grand, Maitland, and Severn Rivers only, but it is the intention to increase the staff of recorders now that permanent gauges have been established at the better class of stations, and the number will be increased if means can be found to protect the poor stations from backwater and provide more stable control. In the meantime, it is to be understood that the tabulated discharges for these stations indicate with a sufficient degree of accuracy the actual volume of water passing at the time of measurement from month to month, and they have a certain definite value on this account.

STREAM FLOW DATA

BLACK RIVER

Station.	Date of Measurement.	Gauge Height.	Discharge in cubic feet per second.	Estimated run off in sec. ft. per sq. mile.	Remarks.
Washago	Aug. 1, 1913	18.80	124	.21	(a) Stream held back for log drive.
"	Sept. 3, 1913	18.40	45	.08	
"	Oct. 2, 1913	17.90	3 (a)	.....	

BLANCHE RIVER

Englehart	Aug. 1, 1911	.....	461	2.00	
"	Aug. 31, 1911	.....	233	1.00	
"	Oct. 11, 1911	.....	147	.64	
"	Jan. 11, 1912	.....	191	.83	
"	Mar. 7, 1912	.....	122	.53	
"	Mar. 30, 1912	.....	161	.70	

BOYNE RIVER

Alliston	June 11, 1912	.....	66	.85	(a) Estimated. No velocity for metering.
"	July 6, 1912	.....	12 (a)	.....	
"	Aug. 9, 1912	.....	66	.86	
"	Sept. 13, 1912	.....	27	.36	
"	Oct. 13, 1912	.....	50	.65	

CREDIT RIVER

Cataract Jct.	June 24, 1912	10.15	52	.57	(a) Water rose during time of measurement.
"	July 22, 1912	10.30	67	.73	
"	Aug. 29, 1912	10.20	54	.59	
"	Aug. 29, 1912	10.30	76 (a)	.84	10 a.m.
"	Sept. 30, 1912	10.40	87	.96	5 p.m.
"	Sept. 30, 1912	10.50	98	1.07	10 a.m.
"	Oct. 31, 1912	10.20	53	.59	6 p.m.
"	Oct. 31, 1912	10.40	90	.99	10 a.m.
"	Nov. 23, 1912	10.50	97	1.06	7.30 p.m.
"	Dec. 30, 1912	10.40	86	.94	(b) Backwater due to construction of dam.
"	Jan. 30, 1913	11.10	200	2.19	
"	Feb. 28, 1913	10.04	84	.92	
"	Mar. 29, 1913	11.50	230	2.52	
"	Apr. 30, 1913	10.80	171	1.87	
"	May 26, 1913	10.60	108	1.18	
"	June 25, 1913	10.20	53	.58	
"	July 25, 1913	10.10	41	.45	
"	Aug. 31, 1913	10.10	35 (b)	.38	
"	Oct. 3, 1913	10.20	42 (b)	.46	

GULL RIVER

Minden	July 27, 1911	.....	532	1.33	(a) Possibly in error
"	Sept. 6, 1911	.....	546	1.36	Note.—This river regulated by artificial storage for Trent Valley Canal.
"	Oct. 9, 1911	4.9 (a)	642	1.60	
"	Nov. 3, 1911	4.2	448	1.12	
"	Dec. 9, 1911	5.45	696	1.74	
"	Jan. 10, 1912	4.9	569	1.42	
"	Feb. 9, 1912	4.1 (a)	410	1.02	
"	Mar. 8, 1912	3.8 (a)	405	1.01	
"	Apr. 15, 1912	6.6	1,124	2.81	
"	May 15, 1912	7.3	1,613	4.03	
"	June 13, 1912	5.7	780	1.95	
"	July 15, 1912	7.0	1,561	3.90	

MAGANETAWAN RIVER

Station.	Date of Measurement.	Gauge Height.	Discharge in cubic feet per second.	Estimated run off in sec. ft. per sq. mile.	Remarks.
Katrine (a)	June 15, 1912		473	3.13	(a) Above Doe Lake
"	July 4, 1912		192	1.27	
"	Aug. 3, 1912		105	.69	
"	Sept. 5, 1912		107	.71	
"	Oct. 7, 1912		132	.87	
"	Nov. 8, 1912		418	2.76	
"	Dec. 5, 1912		583	3.85	
"	Jan. 9, 1913		227	1.50	
"	Feb. 5, 1913		300	1.98	
"	Mar. 9, 1913		205	1.35	
"	Apr. 8, 1913		1,415	9.35	
"	May 6, 1913		817	5.39	
"	June 5, 1913		358	2.36	
"	July 3, 1913		77	.61	
"	Aug. 1, 1913		59	.39	
"	Sept. 4, 1913		64	.42	
"	Oct. 15, 1913		89	.59	
Burk's Falls	June 14, 1912		1,504	4.18	
"	July 5, 1912		340	.94	
"	Aug. 4, 1912		240	.67	
"	Sept. 6, 1912		251	.69	
"	Oct. 5, 1912		330	.91	
"	Nov. 8, 1912		1,047	2.90	
"	Dec. 5, 1912		865	2.40	
"	Jan. 9, 1913		675	1.87	
"	Feb. 5, 1913		745	2.06	
"	Mar. 10, 1913		639	1.77	
"	Apr. 6, 1913		2,403	6.65	
"	May 6, 1913		1,122	3.11	
"	June 5, 1913		716	1.09	
"	July 3, 1913		353	.98	
"	Aug. 21, 1913		211	.58	
"	Sept. 5, 1913		193	.53	
"	Oct. 16, 1913		260	.72	
Byng Inlet (a)	Oct. 10, 1912		391	.....	(a) Measured at one outlet only.
"	Nov. 11, 1912		1,053	.....	
"	Dec. 12, 1912		2,044	.....	
"	Jan. 13, 1913		965	.....	
"	Feb. 10, 1913		965	.....	
"	Mar. 14, 1913		827	.....	
"	July 8, 1913		1,311	.....	
"	Aug. 12, 1913		535	.....	
"	Sep. 10, 191		(b)	.....	(b) No flow.

MISSISSAGA RIVER

Mississaga (a)	July 7, 1913		4,395	(b)	(a) This station seriously affected by wind levels on Lake Huron, which cause back-water at point of measurement. (b) Watershed not surveyed.
"	Aug. 9, 1913		3,343	"	
"	Sep. 9, 1913		1,282	"	
"	Oct. 20, 1913		2,526	"	

MUSKOKA RIVER

Station.	Date of Measurement.	Gauge Height.	Discharge in cubic feet per second.	Estimated run-off in sec. ft. per sq. mile.	Remarks.
High Falls (a)	Sep. 8, 1911	.....	124	.13	(a) North Branch, above Bracebridge.
"	Sep. 26, 1911	.....	123	.13	
"	Sep. 26, 1911	.....	104 (b)	.11	(b) Below Port Sydney.
"	June 6, 1912	.....	2,828	2.91	
"	July 3, 1912	.....	150	.15	
"	Aug. 2, 1912	.....	193	.20	
"	Sep. 4, 1912	.....	215	.22	
"	Oct. 4, 1912	.....	391	.40	
"	Nov. 6, 1912	23.70	1,139	1.18	
"	Dec. 4, 1912	25.20	3,242	3.36	
"	Jan. 8, 1913	23.80	1,141	1.18	
"	Feb. 4, 1913	24.20	1,561	1.62	
"	Mar. 7, 1913	24.00	1,268	1.31	
"	April 6, 1913	27.00	6,608	6.85	
"	May 6, 1913	24.60	2,367	2.46	
"	June 4, 1913	23.60	847	.88	
"	July 2, 1913	22.50(c)	200	.21	(c) Back-water due to construction work.
"	Aug. 1, 1913	22.30	318	.33	
"	Sep. 4, 1013	22.10	235	.24	
"	Oct. 14, 1913	22.70(c)	171	.18	
South Falls (d)	Sep. 9, 1911	.....	303	.39	
"	Sep. 27, 1911	.....	271	.35	(d) South Branch above Bracebridge.
Trethewey's Falls	Aug. 2, 1912	16.60	1,337 (e)	2.03	
"	Sep. 4, 1912	13.30	349	.53	(e) Log drive raised water 3 ft. in a few hours.
"	Oct. 5, 1912	13.50	414	.63	
"	Nov. 6, 1912	14.50	1,258	1.91	
"	Dec. 4, 1912	16.50	1,232	1.87	
"	Jan. 8, 1913	14.70	1,096	1.67	
"	Feb. 4, 1913	15.50	1,262	1.92	
"	Mar. 8, 1913	15.10	1,248	1.9	
"	April 7, 1913	19.00	7,312	11.11	
"	May 6, 1913	16.90	2,175	3.31	
"	June 4, 1913	14.30	350	.53	
"	July 2, 1913	13.50	408	.62	
"	Aug. 1, 1913	15.20	1,324	2.01	
"	Sep. 3, 1913	12.60	292	.44	
"	Oct. 14, 1913	12.30	204	.31	
Bala (f)	Oct. 12, 1912	.....	1,663	.....	(f) Below Muskoka Lake, artificially controlled by dam at Bala.
"	Nov. 14, 1912	.....	5,797	.....	
"	Dec. 12, 1912	.....	6,732	.....	
"	Jan. 14, 1913	.....	2,646	.....	
"	Feb. 12, 1913	.....	3,263	.....	
"	Mar. 15, 1913	.....	3,748	.....	
"	Apl. 12, 1913	.....	13,576	.....	
"	May 9, 1913	.....	6,377	.....	
"	June 11, 1913	.....	818	.....	(g) Dam closed during construction of new dam and bridge, June to November.
"	July 9, 1913	.....	150 (g)	.....	
"	Aug. 13, 1913	.....	484 (g)	.....	
"	Sep. 12, 1913	.....	57 (g)	.....	
"	Oct. 22, 1913	.....	22 (g)	.....	

NOTTAWASAGA RIVER

Nicholson (a)	June 11, 1912	7.00	426	1.31	(a) Station at McLean's bridge.
"	July 6, 1912	5.61	197	.61	
"	Aug. 9, 1912	5.60	190	.58	
"	Sep. 12, 1912	5.54	156	.48	
"	Oct. 13, 1912	6.42	260	.80	
"	Nov. 15, 1912	11.02	1,580	4.86	
"	Dec. 13, 1912	6.72	352	1.08	

NOTTAWASAGA RIVER.—Continued.

Station.	Date of Measurement.	Gauge Height.	Discharge in cubic feet per second.	Estimated run-off in sec. ft. per sq. mile.	Remarks.
Nicholson	Jan. 15, 1913	7.02	481	1.48	
"	Feb. 13, 1913	6.02	241	.74	
"	Mar. 16, 1913	17.02	2,416	7.43	
"	Apl. 12, 1913	10.02	1,261	3.88	
"	May 10, 1913	6.22	355	1.09	
"	June 11, 1913	5.70	223	.69	
"	July 9, 1913	5.50	139	.43	
"	Aug. 13, 1913	5.30	89	.27	
"	Sep. 12, 1913	5.50	131	.40	
"	Oct. 22, 1913	6.00	209	.64	

ROUGE CREEK

Markham	May 14, 1912		24 (a)	.36	(a) Below Reesor's dam.
"	May 14, 1912		23 (b)	.36	(b) Above Milne's dam.
"	June 21, 1912		23 (a)	.36	
"	July 16, 1912		7 (a)	.10	
"	Aug. 17, 1912		11 (a)	.16	Note.—Volume of flow governed by operation of mills up stream.
"	Sep. 14, 1912		43 (a)	.66	
"	Oct. 14, 1912		69 (a)	1.06	

SAUGEEN RIVER

Port Elgin	July 7, 1911	4.65	491	.31	(a) Error in gauge reading evident.
"	Aug. 17, 1911	4.55	399	.25	
"	Sep. 20, 1911	4.65	506	.32	
"	Oct. 13, 1911	5.10	692	.44	(b) Gauge heights not reliable owing to ice conditions.
"	Nov. 17, 1911	(a)	4,704	3.01	
"	Dec. 20, 1911	(b)	1,473	.94	
"	Jan. 25, 1912	(b)	2,308	1.40	
"	Feb. 24, 1912	5.30(b)	876	.56	(c) Gauge height 20.0 on April 8, 1912, at peak of flood.
"	Mar. 27, 1912	7.00	1,922	1.23	
"	Apr. 10, 1912	13.80	19,436 (c)	12.45	
"	Apr. 25, 1912	8.20	4,028	2.58	
"	May. 29, 1912	8.20	4,323	2.77	
"	June 26, 1912	5.70	1,066	.68	
"	July 23, 1912	5.70	1,116	.71	
"	Aug. 25, 1912	6.10	1,482	.95	
"	Sep. 25, 1912	6.50	1,965	1.26	
"	Oct. 27, 1912	6.1	1,502	.96	
"	Nov. 26, 1912	7.20	2,883	1.84	
"	Dec. 21, 1912	7.20	2,881	1.84	
"	Jan. 25, 1913	10.00	6,273	4.00	
"	Feb. 23, 1913	(b)	2,816	1.80	
"	Mar. 23, 1913	12.00	10,596	6.77	
"	Apr. 21, 1913	7.40	2,341	1.50	
"	May 21, 1913	6.00	1,416	.90	
"	June 16, 1913	5.28	920	59	
"	July 15, 1913	5.10	663	.42	
"	Aug. 19, 1913	4.50	361	.23	
"	Sep. 23, 1913	4.60	386	.25	
"	Oct. 27, 1913	5.75	897	.57	
Walkerton	June 26, 1912	15.65	679	.76	
"	July 23, 1912	15.80	734	.82	
"	Aug. 23, 1912	16.00	806	.90	
"	Sep. 26, 1912	16.00	812	.91	
"	Oct. 25, 1912	16.00	814	.91	
"	Nov. 25, 1912	17.00	1,492	1.67	

SAUGEEN RIVER—Continued.

Station	Date of measurement.	Gauge Height.	Discharge in cubic feet per second.	Estimated run-off in sec. ft. per sq. mile.	Remarks.
Walkerton	Dec. 21, 1912....	16.80	1,280	1.43	
"	Jan. 24, 1913....	20.25	4,696	5.24	
"	Feb. 21, 1913....	17.25	1,720	1.92	
"	Mar. 22, 1913....	24.25	8,836	9.87	
"	Apr. 22, 1913....	17.25	1,724	1.93	
"	May 20, 1913....	16.10	897	1.00	
"	June 17, 1913....	15.65	483	.54	
"	July 16, 1913....	15.20	294	.33	
"	Aug. 20, 1913....	15.00	251	.28	
"	Sep. 24, 1913....	15.20	347	.39	
"	Oct. 28, 1913....	15.70	563	.63	
Chesley	July 17, 1911....	3.95	164	1.82	(a) Gauge height measured in heavy wind.
"	Aug. 16, 1911....	3.85	140	1.56	
"	Sept. 13, 1911....	4.00	168	1.86	
"	Oct. 13, 1911....	4.20	174	1.94	(b) Gauge height 8.2 on April 8, 1912.
"	Nov. 7, 1911....	4.20(a)	185	2.06	
"	Dec. 19, 1911....	4.20	181	2.01	(c) Mill above closed for 2½ days.
"	Jan. 24, 1912....	4.20	180	2.00	
"	Feb. 21, 1912....	4.20	179	2.00	
"	Mar. 26, 1912....	4.50	233	2.56	NOTE.—Volume of flow governed by operation of mills up stream.
"	Apr. 11, 1912....	7.50	2,151 (b)	23.89	
"	Apr. 24, 1912....	.....	369	4.10	
"	May 28, 1912....	4.50	236	2.62	
"	June 25, 1912....	3.85	182	2.02	5.15 p.m.
"	June 25, 1912....	3.40	100	1.11	7.15 p.m.
"	July 24, 1912....	3.80	168	1.86	4.00 p.m.
"	July 24, 1912....	3.30	102	1.13	7.35 p.m.
"	Aug. 23, 1912....	3.30	96	1.07	10.30 p.m.
"	Aug. 24, 1912....	3.75	169	1.87	10.30 p.m.
"	Sept. 25, 1912....	3.50	118	1.31	5.00 p.m.
"	Sept. 25, 1912....	3.20	78	0.859	7.00 p.m.
"	Oct. 28, 1912....	3.50	121 (c)	1.35	

SEGUIN RIVER

Parry Sound	June 8, 1912....	11.10	1,406	3.87	NOTE.—Gauge heights affected by back-water from Mill Lake dam.
"	July 5, 1912....	9.00	293	.81	
"	Aug. 8, 1912....	8.00	189	.52	
"	Sept. 11, 1912....	8.40	244	.67	
"	Oct. 11, 1912....	6.20	121	.33	
"	Nov. 12, 1912....	10.70	1,034	2.85	
"	Dec. 12, 1912....	12.50	2,283	6.29	
"	Jan. 13, 1913....	10.70	1,016	2.80	
"	Feb. 11, 1913....	11.50	710	1.95	
"	Mar. 14, 1913....	10.80	700	1.93	
"	Apr. 11, 1913....	12.80	2,849	7.85	
"	May 9, 1913....	11.60	700	1.93	
"	June 10, 1913....	11.50	299	.82	
"	July 8, 1913....	8.20	82	.23	
"	Aug. 12, 1913....	5.20	168	.46	
"	Sept. 10, 1913....	5.30	139	.38	
"	Oct. 21, 1913....	5.20	197	.54	

SOUTH RIVER

Station.	Date of Measurement.	Gauge Height.	Discharge in cubic feet per second.	Estimated run-off in sec. ft. per sq. mile.	Remarks.
Powassan	Mar. 19, 1912	.....	136	.42	
"	Apr. 1, 1912	.....	231	.72	
"	June 7, 1912	28.30	1,091	3.40	
"	July 4, 1912	24.40	174	.54	
"	Aug. 5, 1912	24.50	214	.67	
"	Sept. 7, 1912	24.50	213	.67	
"	Oct. 7, 1912	24.60	265	.82	
"	Nov. 9, 1912	28.90	1,346	4.19	
"	Dec. 6, 1912	28.80	1,262	3.92	(a) Debris in stream.
"	Jan. 10, 1913	24.60	266	.83	
"	Feb. 6, 1913	24.20	167	.52	
"	Mar. 11, 1913	24.00	131	.41	
"	Apr. 8, 1913	30.20	2,021	6.27	
"	May 7, 1913	26.00	962	2.99	
"	June 6, 1913	26.00	592	1.84	
"	July 4, 1913	23.70	82	.25	
"	Aug. 4, 1913	23.90	69 (a)	.21	
"	Sept. 5, 1913	23.80	96	.30	
"	Oct. 15, 1913	24.50	141 (a)	.44	

SPANISH RIVER

Nairn	Aug. 8, 1913	.....	1,717	.37	
"	Sept. 9, 1913	.....	1,124	.25	
"	Oct. 18, 1913	.....	2,186	.48	

STURGEON RIVER

Sandy Falls	Aug. 5, 1912	33.80(a)	1,869	.85	(a) Gauge heights affected by backwater.
"	Sept. 9. 1912	33.30	1,543	.70	
"	Oct. 8, 1912	33.80	1,800	.82	
"	Nov. 10, 1912	34.70	3,042	1.38	
"	Dec. 7, 1912	34.00	2,060	.94	
"	Jan. 11, 1913	33.60	1,843	.84	
"	Feb. 7, 1913	32.30	1,259	.57	
"	Mar. 12, 1913	32.10	1,121	.51	
"	Apr. 19, 1913	36.00	5,233	2.38	
"	May 1913	40.60	(b)	.....	(b) No measurement.
"	June 7, 1913	36.60	6,129	2.78	Logs in stream.
"	July 6, 1913	35.20	2,135	.97	
"	Aug. 6, 1913	33.60	1,594	.72	
"	Sept. 7, 1913	33.20	856	.39	
"	Oct. 16. 1913	33.50	1,148	.52	

TEESWATER RIVER

Paisley	Oct. 26, 1912	18.00	248	1.93	
"	Nov. 26, 1912	18.93	662	2.92	
"	Dec. 21, 1912	18.93	665	2.93	
"	Jan. 24, 1913	22.30	1,813	7.99	
"	Feb. 22, 1913	19.70	866	3.82	
"	Mar. 24, 1913	25.60	3,380	14.89	
"	Apr. 22, 1913	18.90	661	2.92	
"	May 20, 1913	17.90	266	1.17	
"	June 17, 1913	17.10	84	.37	
"	July 16, 1913	17.30	194	.85	
"	Aug. 20, 1913	16.80	29 (a)	.13	(a) Mill closed,.
"	Sept.24, 1913	16.80	137	.60	
"	Oct. 28, 1913	17.50	266	1.17	

THAMES RIVER

Station.	Date of measurement.	Gauge Height.	Discharge in cubic feet per second.	Estimated run-off in sec. ft. per sq. mile.	Remarks.
London (a)	Mar. 12, 1912		284	.23	(a) On main stream.
"	June 29, 1912	5.98	250	.20	
"	July 26, 1912	5.90	195	.15	
"	Aug. 27, 1912	6.30	435	.34	Heavy rains.
"	Sept. 27, 1912	6.90	994	.78	
"	Oct. 30, 1912	6.40	596	.47	
"	Nov. 28, 1912	6.90	996	.79	
"	Dec. 29, 1912	6.40	606	.48	
"	Jan. 27, 1913	9.50	4,431	3.49	
"	Feb. 26, 1913	6.90	822	.65	
"	Mar. 27, 1913	12.00	9,641	7.58	
"	Apr. 24, 1913	9.40	4,750	3.74	
"	May 23, 1913	6.30	487	.78	
"	June 19, 1913	6.20	261	.21	
"	July 18, 1913	5.90	202	.16	
"	Aug. 22, 1913	6.20	322	.25	
"	Sept. 26, 1913	5.95	206	.16	
"	Oct. 30, 1913	6.22	363	.29	
London (b)	July 18, 1913	11.10	37	.03	(b) North Branch.
"	Aug. 22, 1913	11.4	132	.10	
"	Sept. 26, 1913	10.7	12	.01	
"	Oct. 30, 1913	11.17	45	.04	
London (c)	July 18, 1913	21.20	74	.06	(c) South Branch.
"	Aug. 22, 1913	21.30	67	.05	
"	Sept. 26, 1913	20.90	21	.02	
"	Oct. 30, 1913	21.45	249	.20	

VERMILION RIVER

White Fish	Aug. 7, 1913	27.40	773	.41	
"	Sept. 8, 1913	26.80	325	.17	
"	Oct. 18, 1913	27.20	559	.29	

WAHNAPITAE RIVER

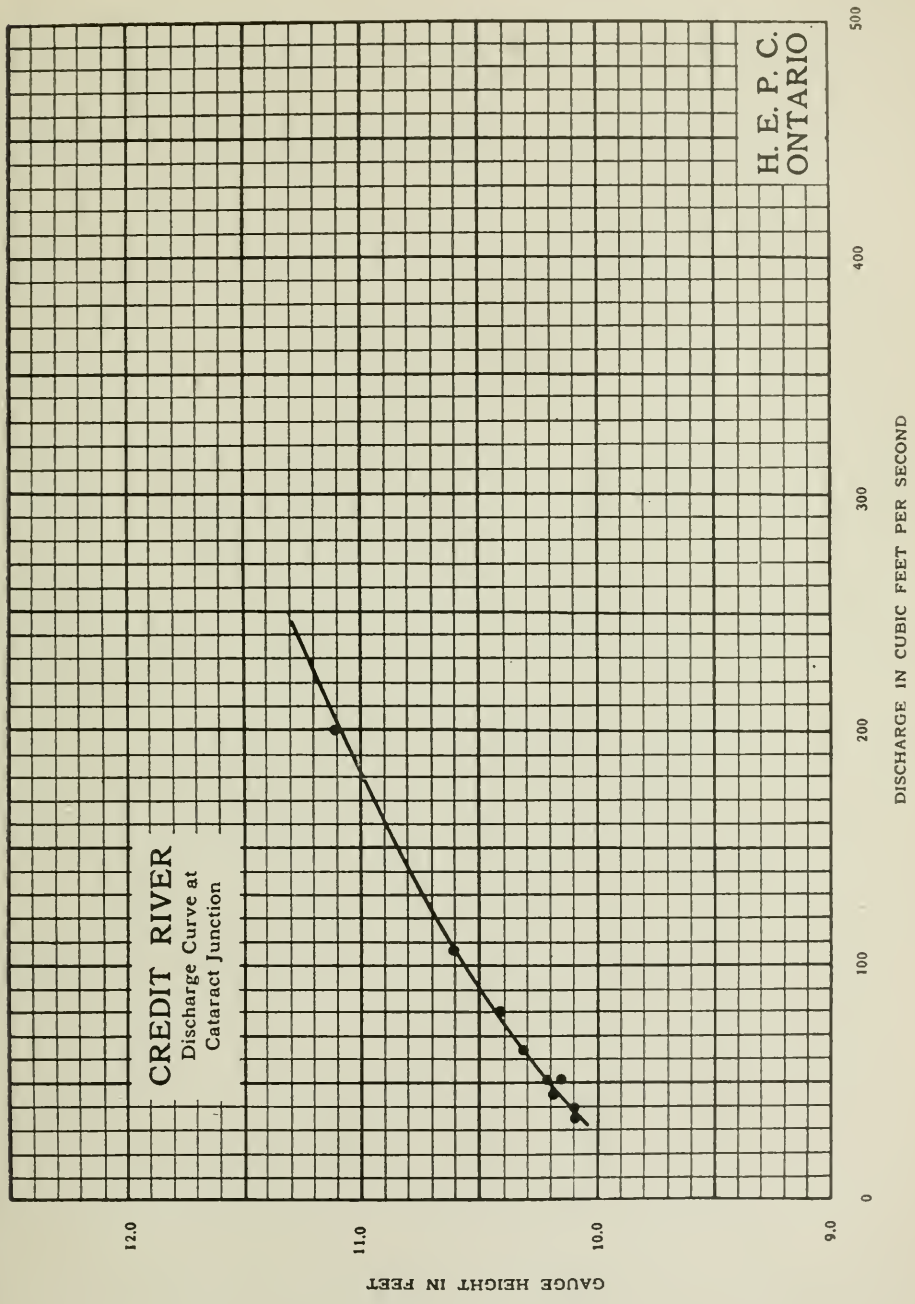
Wahnapitae	Jan. 23, 1906		826	0.91	
"	Aug. 7, 1912		1,807	1.98	
"	Sept. 10, 1912		1,983	2.18	
"	Oct. 9, 1912		1,794	1.97	
"	Nov. 11, 1912		1,908	2.10	
"	Dec. 9, 1912		1,887	2.08	
"	Jan. 12, 1913		1,776	1.95	
"	Feb. 9, 1913		1,329	1.46	
"	Mar. 13, 1913		1,553	1.71	
"	Apr. 20, 1913		(a)		(a) Ice unsafe. No measurement taken.
"	May 8, 1913		5,239	5.75	
"	June 9, 1913		2,915	3.20	
"	July 5, 1913		1,408	1.55	
"	Aug. 11, 1913		982	1.08	
"	Sept. 6, 1913		1,200	1.32	
"	Oct. 17, 1913		977	1.06	

MISCELLANEOUS MEASUREMENTS

River.	Date.	Discharge in sec. ft.	Location.
Abitibi	Oct. 23, 1911	5,487	At Iroquois Falls.
"	Feb. 2, 1912	3,026	At Couchiching Falls.
"	Mar. 12, 1913	1,743	Above Iroquois Falls.
"	Mar. 13, 1913	2,493	¼ mile above Black River.
Black (Nipissing)	Mar. 26, 1913	248	Above McDougall's Chutes.
Bonnechere	Oct. 4, 1913	117	Round Lake Dam.
"	Oct. 6, 1913	106	Golden Lake.
Driftwood	Mar. 22, 1911	39	Monteith.
English	May 26, 1906	6,740	Pelican Falls.
"	June 2, 1906	6,702	Manitou Rapids.
Kaministiquia	Aug. 12, 1905	2,737	Fort William.
"	Sep. 6, 1905	2,091	Tonkin's Farm.
"	Sep. 8, 1905	882	Silver Falls.
"	Feb. 3, 1906	1,100	Kakabeka Falls.
"	Jan. 28, 1906	662	Silver Falls.
"	Mar. 10, 1906	880	Kakabeka Falls.
"	Mar. 6, 1906	494	Silver Falls.
"	Oct. 6, 1906	1,355	Tonkin's Farm.
Kawa Kash Kagama	Sep. 20, 1906	159	Howard's Falls.
Kapuskasing	Sep. 20, 1911	679	Loon Falls.
"	Sep. 21, 1911	713	Lapenagam Falls.
"	Sep. 23, 1911	1,074	Wendega Falls.
"	Sep. 24, 1911	967	Kabohose Falls.
"	Oct. 26, 1911	933	Weiswinin Falls.
"	Feb. 28, 1912	613	Sesebegagan Falls.
"	Feb. 29, 1912	686	Weiswinin Falls.
Mettagami	Mar. 25, 1912	633	Sandy Bay Falls.
"	Mar. 27, 1912	415	Wawiatan Falls.
"	Mar. 16, 1913	195	" "
"	Mar. 29, 1913	240	" "
"	Mar. 30, 1913	232	" "
"	Mar. 30, 1913	207	" "
"	Mar. 30, 1913	218	" "
"	July 15, 1911	792	" "
"	July 11, 1911	921	Kenogamisse Falls.
"	Feb. 7, 1912	1,421	Smooth Rock Falls.
"	Jan. 24, 1912	1,608	Sturgeon Falls.
Madawaska	Oct. 3, 1913	692	Below Calabogie.
Mississippi	Oct. 2, 1913	196	Snow Road.
Missanaibi	Aug. 21, 1911	561	St. Paul's Falls.
"	Aug. 24, 1911	1,107	Pond Falls.
"	Aug. 26, 1911	1,756	Sandy Bay, Glass Falls.
"	Mar. 3, 1912	736	Glass Falls.
Montreal	Jan. 8, 1908	930	Gillies Siding.
Moira	Oct. 25, 1905	700	Belleville.
"	Nov. 8, 1905	590	"
"	Dec. 5, 1905	946	"
Nepigon	Sep. 15, 1905	8,924	Pine Portage.
"	Nov. 3, 1905	7,014	Cameron's Pool.
"	Feb. 9, 1906	5,982	"
"	Mar. 23, 1906	5,879	"
"	Sep. 30, 1906	5,884	"
North-West	Sep. 13, 1912	256	Foot Print Lake.
Onaping	Jan. 1906	254	High Falls.
Pic	Aug. 5, 1906	154	Lake Superior Portage.
Rainy	Oct. 25, 1905	14,145	Fort Frances.
"	Apr. 1, 1906	6,805	"
"	Sep. 26, 1910	5,229	"
Severn	Aug. 22, 1906	1,206	Big Chute.
"	Nov. 9, 1905	1,503	"
Sturgeon (Nipissing)	Jan. 19, 1906	1,230	Smoky Falls.
Sturgeon (Thunder Bay)	July 26, 1906	251	Beaver Falls.
Seine	July 9, 1906	1,842	Island Falls.

MISCELLANEOUS MEASUREMENTS — Concluded.

River.	Date.	Discharge in sec. ft.	Location.
Trent	Oct. 16, 1905	2,200	Trenton.
"	Oct. 25, 1905	2,406	"
"	Nov. 7, 1905	2,196	"
"	Nov. 16, 1905	2,090	Healey Falls.
Vermillion	Jan. 1906	791	Wabageshik Chute.
Wabigoon	Oct. 9, 1905	206	Dryden.
White Fish	Jan. 1905	207	White Fish Falls.
"		146	Below Penache Lake.
Winnipeg	Oct. 14, 1905	5,321	Eastern Outlet.
"	Apr. 8, 1906	4,490	" "
"	Oct. 16, 1905	899	L. of W. Milling Co. head-race.
"	Oct. 16, 1905	406	Keewatin Lumber Co.
"	Oct. 18, 1905	21,794	Western Outlet.
York	Oct. 7, 1913	136	Below High Falls.
"	Oct. 8, 1913	181	Below Bancroft.


CREDIT RIVER
Discharge Curve at
Cataract Junction
H. E. P. C.
ONTARIO
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9.0
0
100
200
300
400
500
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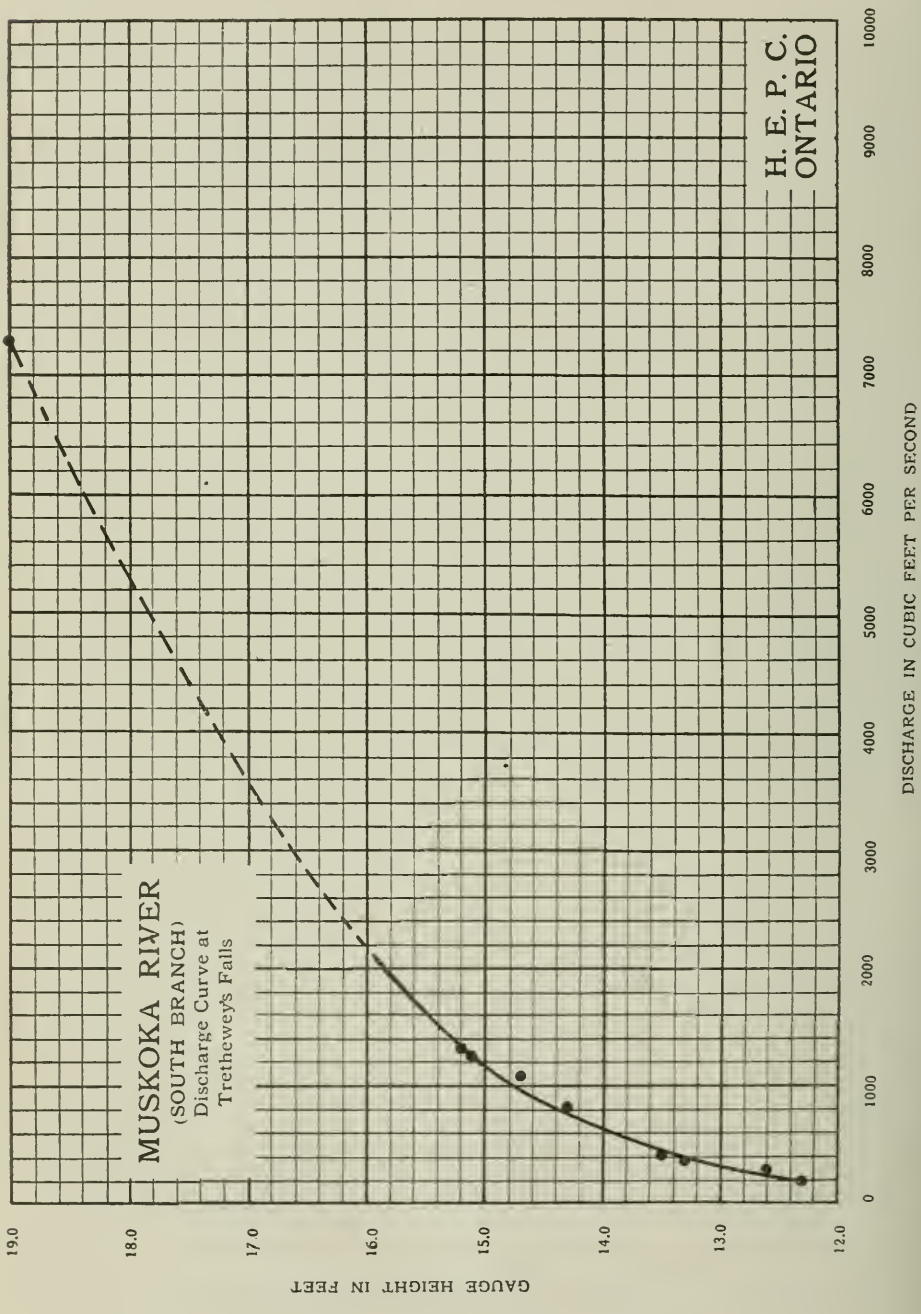
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(SOUTH BRANCH)
Discharge Curve at
Trethewey's Falls
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ONTARIO
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18.0
17.0
16.0
15.0
14.0
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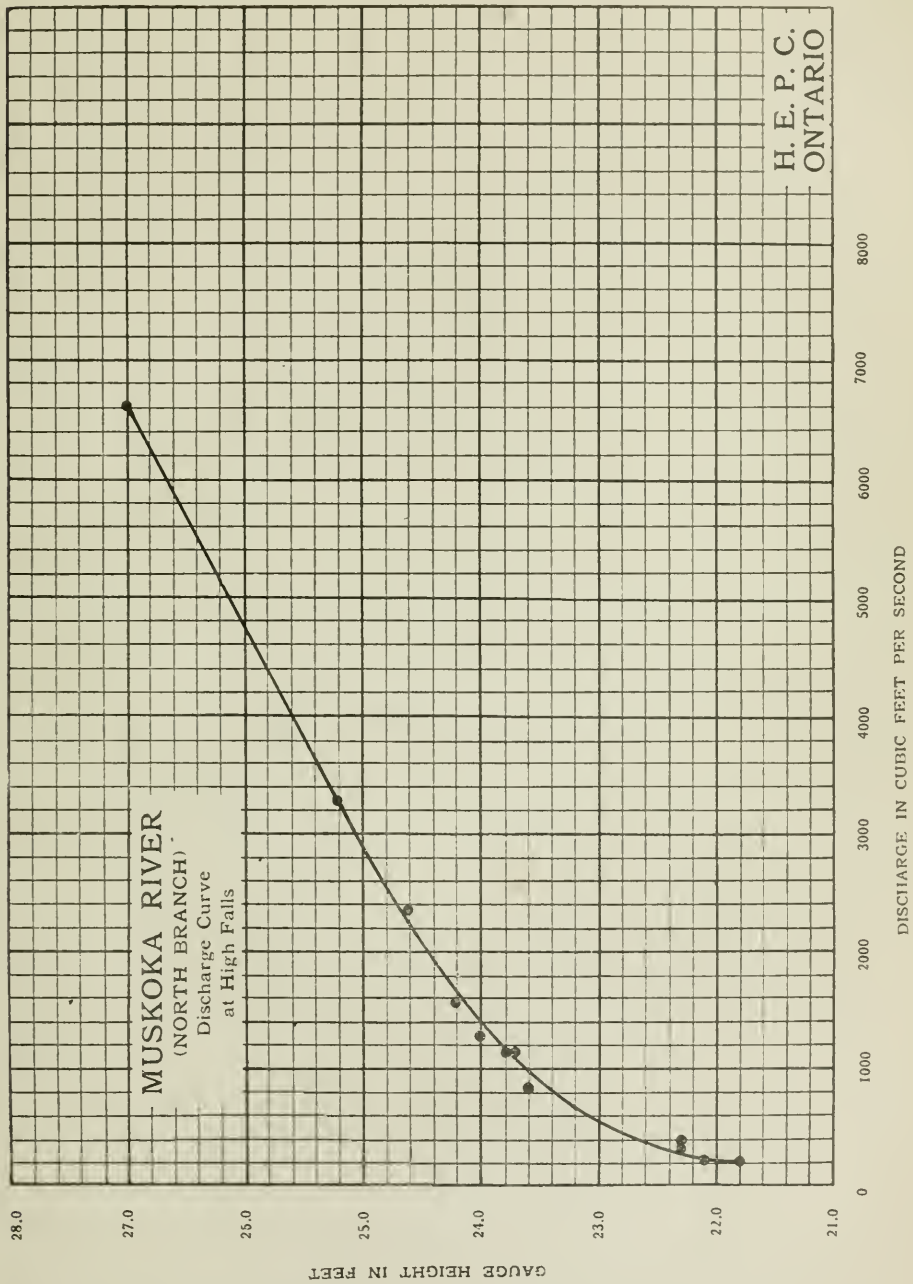
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ONTARIO
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26.0
25.0
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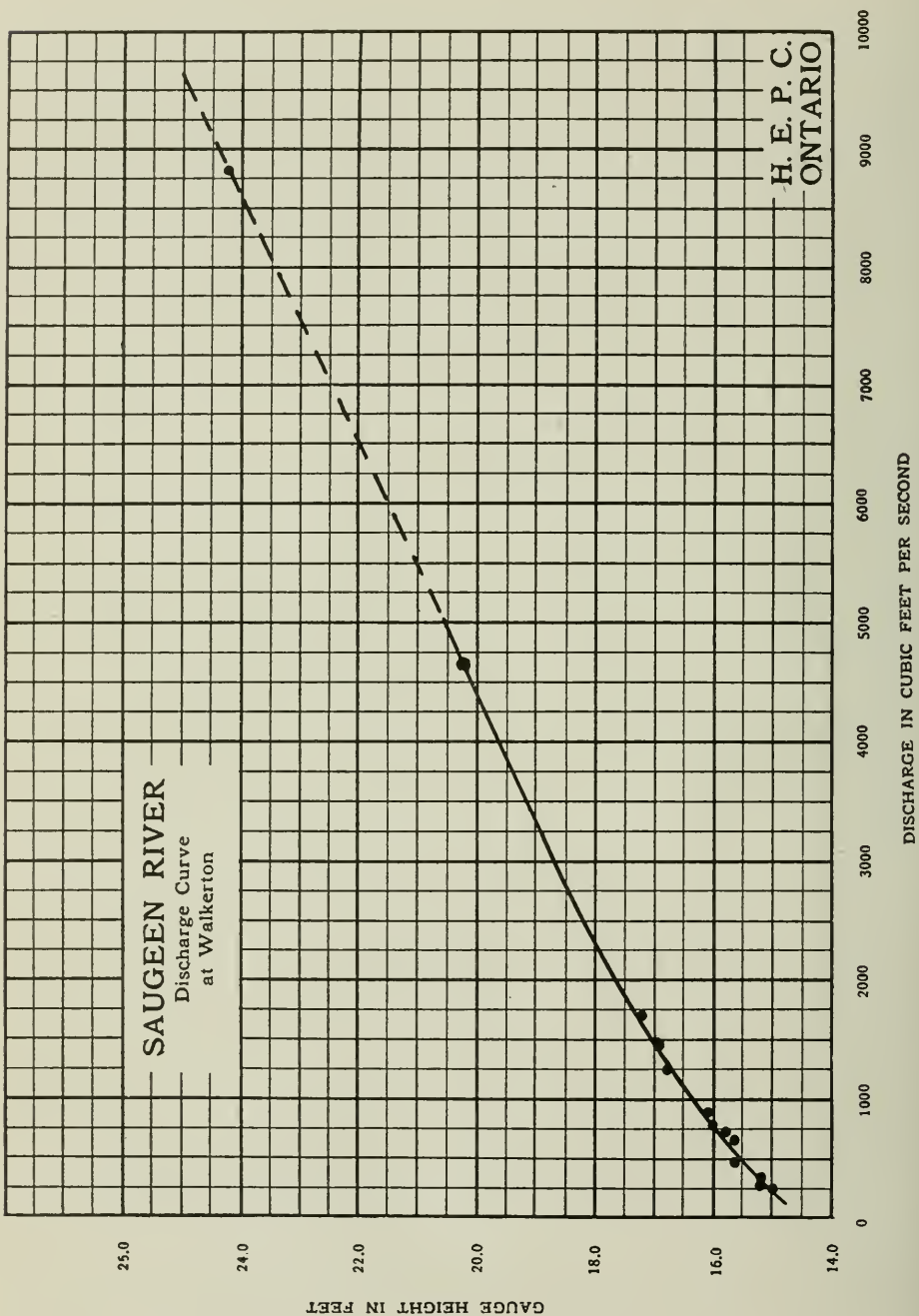
DISCHARGE IN CUBIC FEET PER SECOND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Discharge Curve
at Walkerton
H. E. P. C.
ONTARIO
GAUGE HEIGHT IN FEET
25.0
24.0
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20.0
18.0
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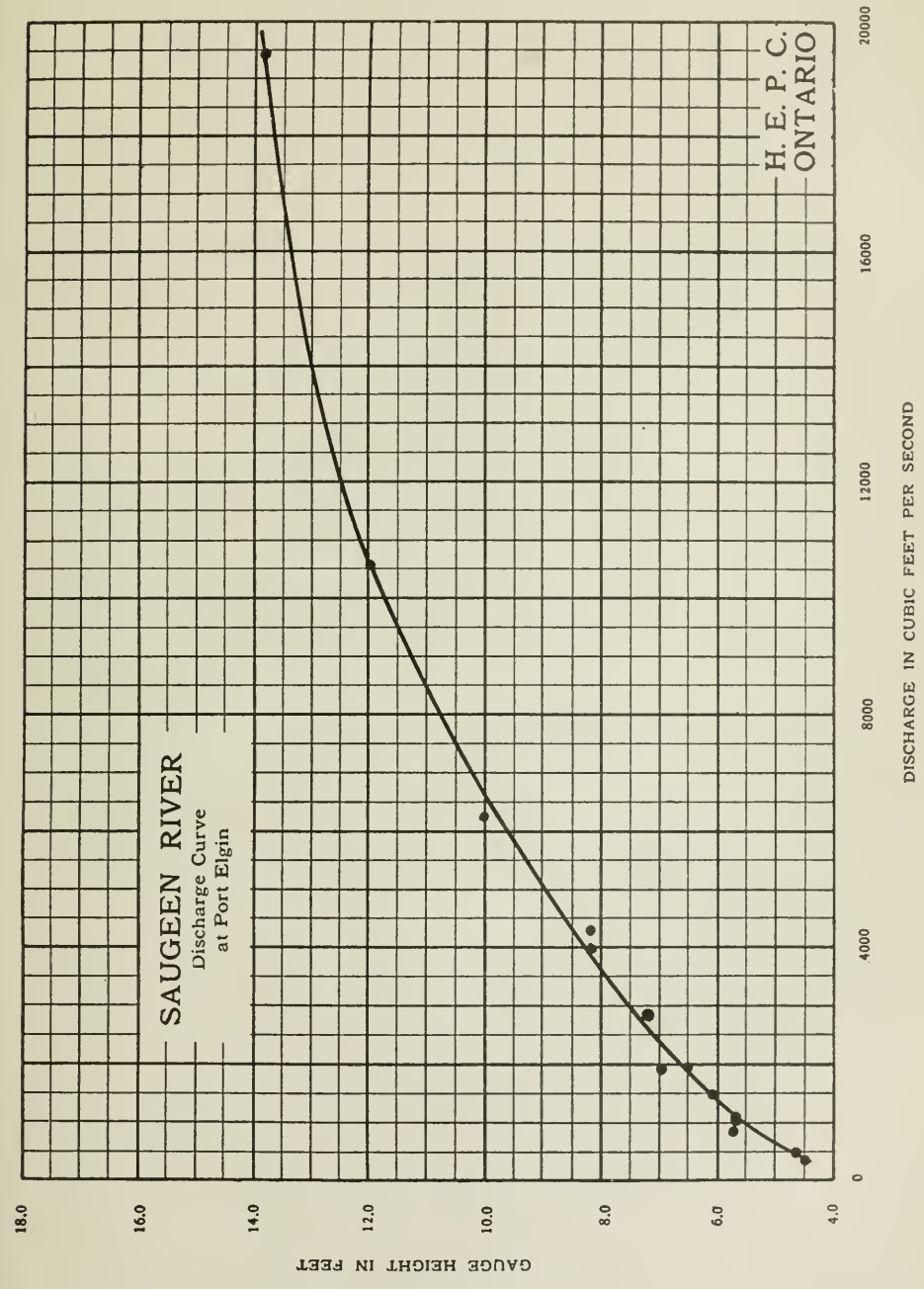
DISCHARGE IN CUBIC FEET PER SECOND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Discharge Curve
at Port Elgin
H. E. P. C.
ONTARIO
GAUGE HEIGHT IN FEET
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14.0
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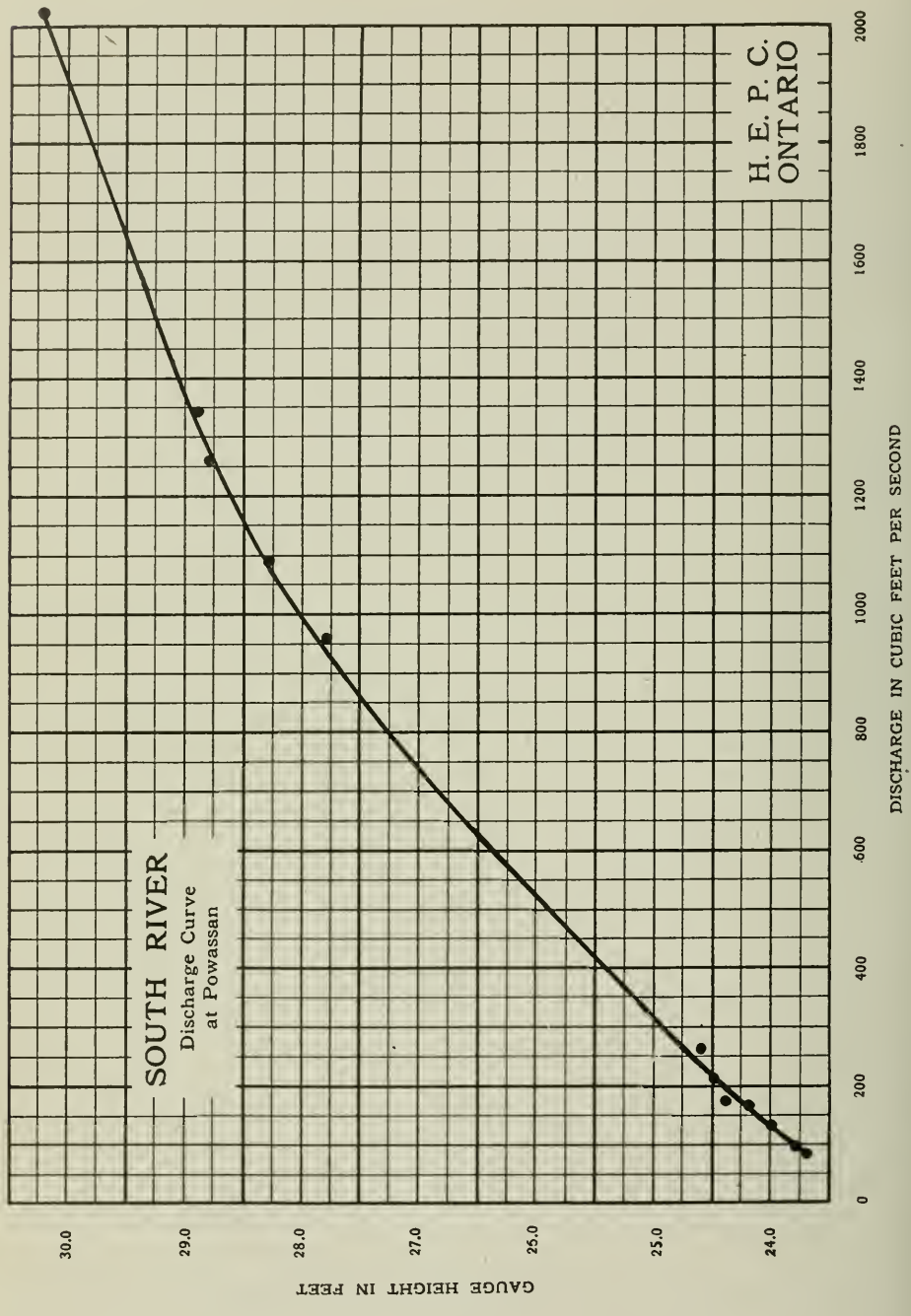
SOUTH RIVER
Discharge Curve
at Powassan
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ONTARIO
GAUGE HEIGHT IN FEET
30.0
29.0
28.0
27.0
26.0
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800
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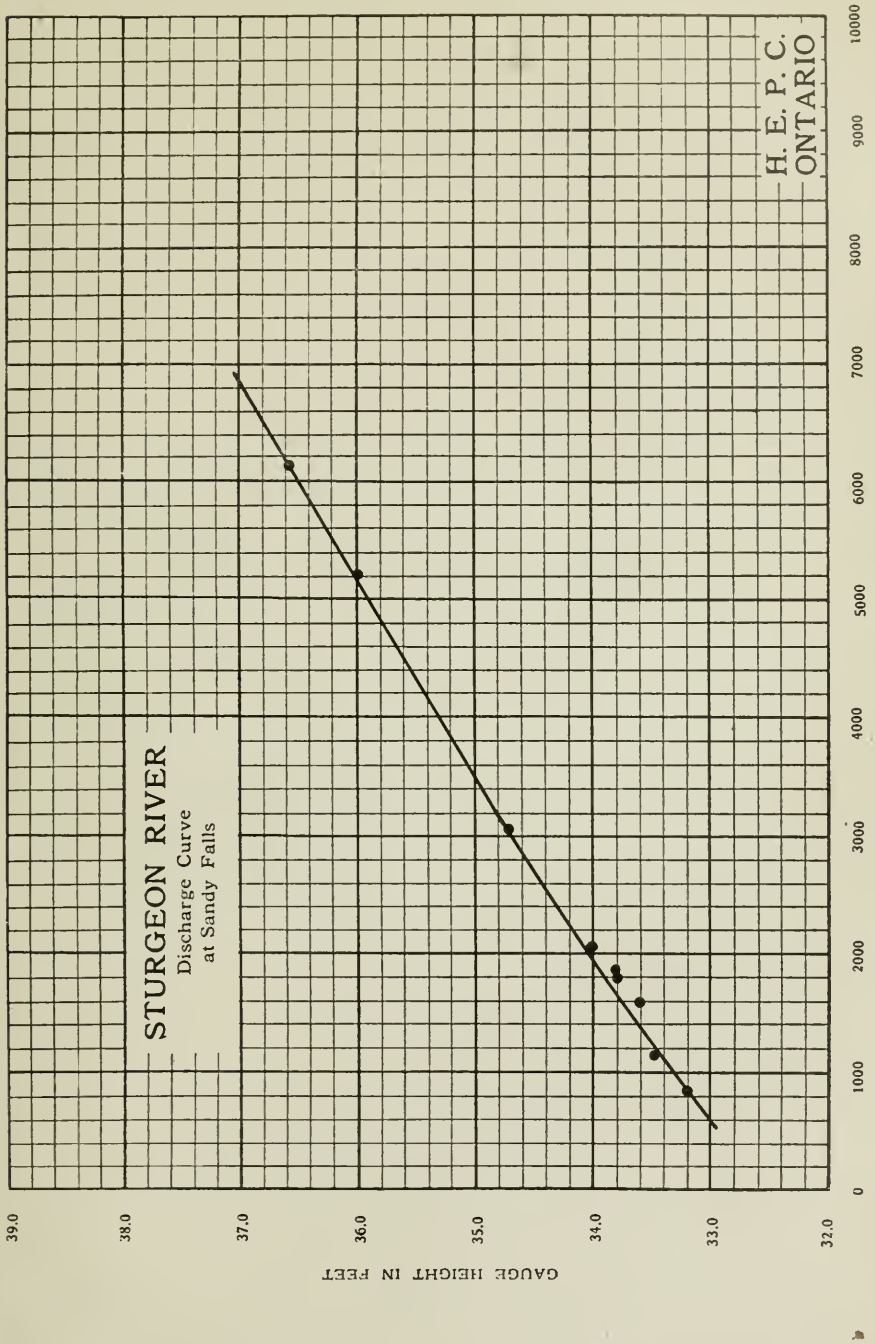
1200
1400
1600
1800
2000


STURGEON RIVER
Discharge Curve
at Sandy Falls
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ONTARIO
GAUGE HEIGHT IN FEET
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38.0
37.0
36.0
35.0
34.0
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4000
5000
6000
7000
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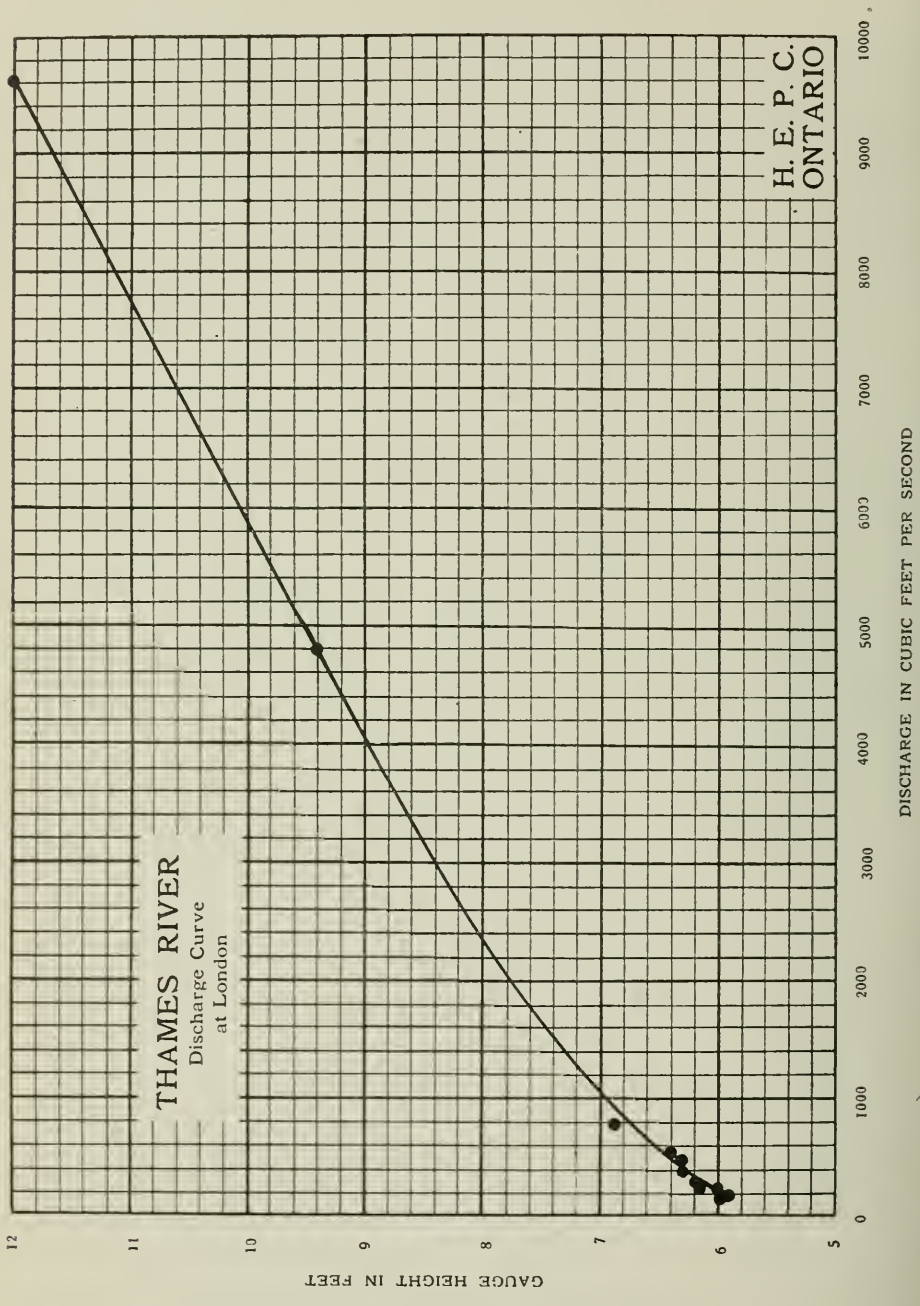
9000
10000
DISCHARGE IN CUBIC FEET PER SECOND


THAMES RIVER
Discharge Curve
at London
H. E. P. C.
ONTARIO
GAUGE HEIGHT IN FEET
12
11
10
9
8
7
6
5
DISCHARGE IN CUBIC FEET PER SECOND
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

INDEX

A

Page

Abitibi Pulp and Paper Co. 228
Acton, Municipal Work 83
Acts 1
Agreements 18
Ailsa Craig, Municipal Work 84
Alliston, Municipal Work 84
Alvinston, Municipal Work 84
Amherstburg, Municipal Work 84
Ancaster Village, Municipal Work. 85
Appleby, Municipal Work 85
Aurora, Municipal Work 85
Ayr, Municipal Work 85

B

Baden, Municipal Work 85
Barrie Demonstration 168
Barrie, Municipal Work 86
Barrie Station 49
Beachville, Municipal Work 86
Beamsville, Municipal Work 86
Beaver River, Hydraulic Work 275
Beaverton, Municipal Work 86
Beeton, Municipal Work 87
Belmont, Municipal Work 87
Belle River, Municipal Work 88
Berlin, Municipal Work 87
Berlin Station 40
Bismarck, Municipal Work 89
Blenheim, Municipal Work 88
Blenheim Township, Municipal Work 88
Bobcaygeon, Municipal Work 89
Bonnechere Storage System 213
Bothwell, Municipal Work 89
Bradford, Municipal Work 89
Brampton, Municipal Work 89
Brant Station 46
Brantford, Municipal Work 89
Brantford Township, Municipal Work 90
Brantford, Underground Construction 192
Brechin, Municipal Work 90
Breslau, Municipal Work 90
Brigden, Municipal Work 90
Bright, Municipal Work 91
Bronte, Municipal Work 90

C

Caledonia, Municipal Work 91
Camden, Municipal Work 91
Cannington, Municipal Work 91
Capital Costs 79
Cayuga, Municipal Work 91
Chatham, Municipal Work 92
Chatham, Underground Construction. 192
Chatsworth, Municipal Work 92
Chesterville, Municipal Work 92
Clinton, Municipal Work 92
Coatsworth, Municipal Work 94
Coldwater Fair 170
Coldwater, Municipal Work 94
Coldwater Station 49

Page

Comber, Municipal Work 94
Cooksville Station 44
Collingwood Demonstration 168
Collingwood, Municipal Work 94
Collingwood Station 49
County of Bruce, Hydraulic Work .. 216
Crediton, Municipal Work 95
Creemore, Municipal Work 95
Crossings 18
Crown Leases, Hydraulic Work 216

D

Dashwood, Municipal Work 95
Demonstrations 168, 174
Demonstration Farms 183
Demonstrations of Threshing and Silo Filling 174
Dereham Township, Municipal Work 95
Description of Low Tension Lines.. 54
Developments, Engineering 52
Dog Lake, Hydraulic Work 217
Doon, Municipal Work 95
Dorchester North Township, Municipal Work 96
Downie Township, Municipal Work.. 95
Dresden, Municipal Work 96
Drumbo, Municipal Work 96
Dundas Demonstration 168
Dundas, Municipal Work 96
Dundas Station 34
Dunnville, Municipal Work 96
Durham, Municipal Work 97

E

Eastwood, Municipal Work 97
Electrical Equipment for the Farm.. 187
Electric Railway Projects 197
Elmira Demonstration 172
Elmira, Municipal Work 97
Elmvale Fair 172
Elmvale, Municipal Work 98
Elora, Municipal Work 98
Essex, Municipal Work 98
Essex Station 48
Etobicoke Township, Municipal Work 98
Exeter, Municipal Work 99
Expenditures 82

F

Fair Demonstrations 168
Fenwick, Municipal Work 99
Fergus Fair 170
Fergus, Municipal Work 99
Finch, Municipal Work 99
Finch Township, Municipal Work.. 99
Flesherton, Municipal Work 99
Fletcher, Municipal Work 99
Fort Frances, Hydraulic Work ..218, 230
Fort William, Municipal Work 100
Forest, Municipal Work 100

G

	Page
Gainsboro Township, Muncipal Work	101
Galt, Municipal Work	100
Galt, Underground Construction	192
Georgetown, Municipal Work	101
Glencoe, Municipal Work	102
Goderich Agricultural Exhibition	170
Goderich, Municipal Work	102
Goderich, Underground Construction	192
Grand River Improvement.....218,	233
Grand Valley, Municipal Work.....	102
Grantham Township, Municipal Work	102
Granton, Municipal Work	102
Grimsby, Municipal Work	102
Grimsby, North Township, Municipal Work	103
Guelph, Municipal Work	103
Guelph Station	38

H

Hagersville, Municipal Work	103
Hamilton, Municipal Work	103
Hamilton, Underground Construction	192
Harrow, Municipal Work	105
Hawtry, Municipal Work	105
Hensal, Municipal Work	105
Hespeler, Municipal Work	105
High Tension and General Testing Department	209
Hillsdale, Municipal Work	105
Hydraulic Investigations	213
Hydrographic Surveys, Hydraulic Investigations	300

I

Illuminating Engineering	206
Ingersoll, Municipal Work	106

J

Jeannette, Municipal Work	106
Jordon, Municipal Work	106

K

Kent Station	48
Kerrwood, Municipal Work	106
Kincardine, Municipal Work	106
Kingscourt, Municipal Work	107
Kingston, Municipal Work	107
Kingston, Underground Construction	194
Kingsville, Municipal Work	106
Komoka, Municipal Work	107

L

Laboratory	202
Laboratory Engineering	52
Lake of the Woods, Hydraulic Work	218
Lamp Testing Department	210
Leamington, Municipal Work	107
Legal Proceedings	1
Lighting Country Roads	190
London, Municipal Work	107,
London Station	38
Louth Township, Municipal Work	108
Lucan, Municipal Work	108
Lucknow, Municipal Work	108

M

Maitland River, Hydraulic Work....	291
Markdale, Municipal Work	108
Markham Fair	172
Markham Village, Municipal Work	108
Melbourne, Municipal Work	108
Merlin, Municipal Work	109
Merritton, Municipal Work	109
Methods of Silo Filling	191
Midland, Municipal Work	109
Mildmay, Municipal Investigations.	91
Milton Municipal Work	109
Mimico, Municipal Work	109
Miscellaneous Discharge Measurements, Hydraulic Investigations	309
Mitchell, Municipal Work	109
Mount Brydges, Municipal Work....	110
Municipal Accounts	136
Municipal Advices	83
Municipal Department	83
Municipal Electrical Inspection	166
Municipal Purchases	163
Municipal Rates	156
Municipal Underground Construction	192
Municipal Work	83
Muskoka River, Storage.....220,	263

N

Nelson Township, Municipal Work	110
Newburg, Municipal Work	111
New Hamburg, Municipal Work	110
Newmarket, Municipal Work	111
New Toronto, Municipal Work	128
Niagara Falls, Municipal Work	111
Niagara Falls Station	32
Niagara System, Construction	32
Niagara System, Operation	61
Niagara Township, Municipal Work.	111
North Bay, Municipal Work	111
Norwich, Municipal Work	112
Norwich, North Township Municipal Work	112
Norwich, South Township, Municipal Work	112

O

Oil City, Municipal Work	112
Oil Springs, Municipal Work	112
Ontario County, Hydraulic Work	221
Operation of the Systems	61
Orangeville, Municipal Work	112
Ottawa, Municipal Work	113
Otterville, Municipal Work	113
Overhead Construction, Order	21
Owen Sound District, Hydraulic Work	225
Owen Sound, Municipal Work.....	113

P

Page

Palmerston, Municipal Work 114
Paris, Municipal Work 114
Paris, Underground Construction... 196
Parkhill, Municipal Work 114
Parliament Buildings 52
Pelham Township, Municipal Work . 116
Penetang Station 49
Penetanguishene, Municipal Work.. 114
Peterboro, Municipal Work 114
Peterboro, Underground Construction 196
Petersburg, Municipal Work 116
Petrolea, Municipal Work 116
Plattsville, Municipal Work 116
Point Edward, Municipal Work 118
Port Arthur, Municipal Work 117
Port Arthur Station 51
Port Arthur System, Construction.. 51
Port Arthur System, Operation 74
Port Colborne, Municipal Work..... 117
Port Credit, Municipal Work 118
Port Dalhousie, Municipal Work .. 118
Port McNicoll, Municipal Work..... 118
Port Perry, Municipal Work 118
Port Robinson, Municipal Work.... 118
Port Stanley, Municipal Work 118
Power Commission Act 5
Prescott Fair 170
Prescott, Municipal Work 119
Prescott Station 51
Preston, Municipal Work 119
Preston Station 39
Provincial Expenditures 81

R

Railway Act, Hydro-Electric 1
Rainy Lake, Storage Possibilities... 260
Rapid Power Company 51
Renfrew Fair 170
Renfrew, Municipal Work 119
Ridgetown, Municipal Work 120
Ridgeville, Municipal Work 120
Right-ofWay 18
Rockmills, Municipal Work 120
Rockwood, Municipal Work 120
Rural Demonstrations 174
Rural Distribution 186
Rural Rates 187
Russell, Municipal Work 120

S

Saltfleet Township, Municipal Work. 121
Sarnia, Municipal Work 121
Sault Ste. Marie, Hydraulic Work... 289
Seaforth Demonstration 170
Seaforth, Municipal Work 121
Severn River, Hydraulic Work 270
Severn System, Construction 49
Severn System, Operation 75

Page

Silverdale, Municipal Work 121
Simcoe, Municipal Work 121
Smithville, Municipal Work 121
Special Farm Equipment 190
Springford, Municipal Work 127
St. Agatha, Municipal Work 123
St. Ann, Municipal Work 123
St. Ann's District, Municipal Work.. 124
St. Catharines, Municipal Work 124
St. Catharines, Underground Construction 196
St. Lawrence System, Construction. 51
St. Lawrence System, Operation 78
St. Mary's, Municipal Work 126
St. Thomas, Municipal Work..... 126
St. Thomas Station 43
Standards and Meter Department... 202
Staynor, Municipal Work 121
Stayner Station 49
Steel Tower Lines 23
Stoney Point, Municipal Work 122
Storehouse 199
Stouffville, Municipal Work 122
Stratford, Municipal Work 122
Stratford Station 41
Strathroy, Municipal Work 123
Stream-Flow Data, Hydraulic Investigations 301
Streetsville, Municipal Work 123
Sunderland, Municipal Work 127
Summary, Hydraulic Work 213

T

Tavistock, Municipal Work 127
Terra Cotta, Municipal Work 127
Thamesford, Municipal Work 128
Thamesville, Municipal Work 127
Thedford, Municipal Work 128
Thorold, Municipal Work 128
Tilbury, Municipal Work 128
Tillsonburg, Municipal Work 128
Toronto Laboratory and Storehouse. 199
Toronto, Municipal Work 129
Toronto Station 37
Toronto Storehouse, Construction... 52
Toronto Township, Municipal Work 129
Tottenham, Municipal Work 130
Transformer Stations 29
Transmission System 23

U

Underground Constructions 19
Uxbridge, Municipal Work 130

V

Vineland, Municipal Work 130

W Page

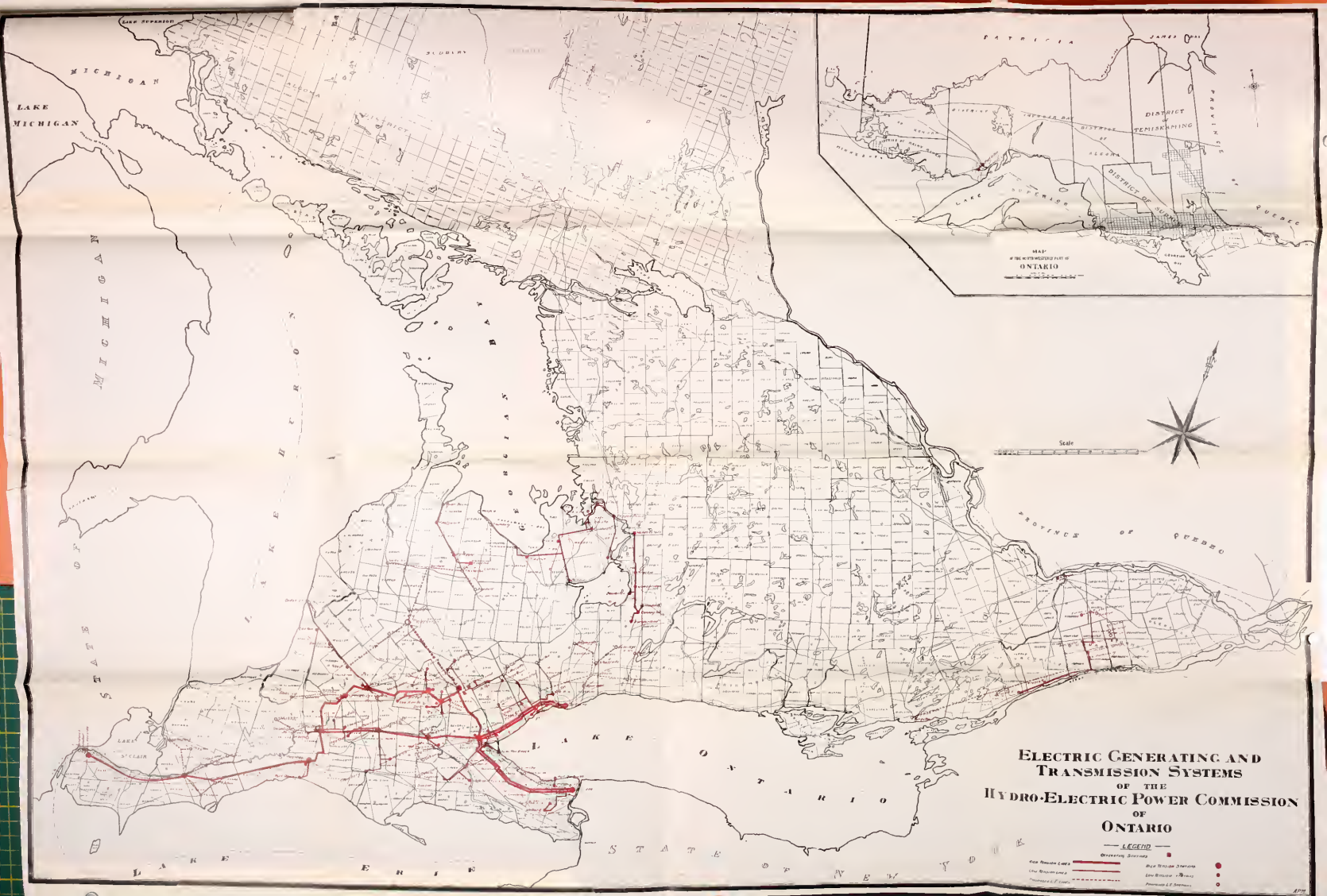
Walkerville, Municipal Work 130
Wallaceburg, Municipal Work 130
Wardsville, Municipal Work 131
Wasdell's Falls Plant 50
Waterdown, Municipal Work 131
Waterford, Municipal Work 131
Waterloo, Municipal Work 131
Waterloo Township, Municipal Work 131
Watford, Municipal Work 131
Waubaushene, Municipal Work 132
Welland, Municipal Work 132
Welland, Underground Construction. 196
Wellandport, Municipal Work 133
Wellesley Township, Municipal Work 133
Weston Fair 138
Weston, Municipal Work 133
West Hamilton, Municipal Work ... 105
Wheatley, Municipal Work 133
Wilmot Township, Municipal Work. 134
Winchester, Municipal Work 133
Windsor, Municipal Work 133
Windsor, Underground Construction. 196
Women's Institutes Convention ... 168
Woodbridge, Municipal Work 134
Wood Pole Transmission Lines 53
Woodstock, Municipal Work 134
Woodstock Station 42
Woodville, Municipal Work 135
Woolwich Township, Municipal Work 134
Wyoming Municipal Work 135

Y

York Township, Municipal Work .. 135

Z

Zorra, East, Township, Municipal Work 135
Zurich, Municipal Work 135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